REPORT No. 286

AERODYNAMIC CHARACTERISTICS OF AIRFOILS—V

CONTINUATION OF REPORTS
Nos. 93, 124, 182, AND 244

By

NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS

REPRINT OF REPORT No. 286, ORIGINALLY PUBLISHED APRIL, 1928

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INTRODUCTION

This collection of data on airfoils has been made from the published reports of a number of the leading aerodynamic laboratories of this country and Europe.[1] The information which was originally expressed according to the different customs of the several laboratories is here presented in a uniform series of charts and tables suitable for the use of designing engineers and for purposes of general reference.

It is a well-known fact that the results obtained in different laboratories, because of their individual methods of testing, are not strictly comparable even if proper scale corrections for size of model and speed of test are supplied. It is, therefore, unwise to compare too closely the coefficients of two wing sections tested in different laboratories. Tests of different wing sections from the same source, however, may be relied on to give true relative values.

The absolute system of coefficients has been used, since it is thought by the National Advisory Committee for Aeronautics that this system is the one most suited for international use and yet it is one from which a desired transformation can be easily made. For this purpose a set of transformation constants is given.

Each airfoil section is given a reference number, and the test data are presented in the form of curves from which the coefficients can be read with sufficient accuracy for designing purposes. The dimensions of the profile of each section are given at various stations along the chord in per cent of the chord length, the latter also serving as the datum line. When two sets of ordinates are necessary, on account of taper in chord or ordinate, those for the maximum section (at center of span) are given on the individual characteristic sheets, while those for the tip (dotted) section are given in separate tables, page 375. The shape of the section is also shown with reasonable accuracy to enable one to more clearly visualize the section under consideration, the outside of the heavy line representing the profile.

The authority for the results here presented is given as the name of the laboratory at which the experiments were conducted, as explained under abbreviations, with the size of model, wind velocity, and year of test.

TRANSFORMATION CONSTANTS

For the convenience of those who prefer to use a system of units other than the absolute system, there is given below a table of transformation constants based on the standard condition adopted by the National Advisory Committee for Aeronautics of—

Temperature	=15° C.	=59° F.
Pressure	=760 mm Hg.	=29.92 in. Hg.
Humidity	=0.	
Gravity	=9.80665 m/s^2	=32.1740 ft./sec.^{2}

[1] A previous collection of airfoil sections numbered 1 to 623 and Charts 1 to 16 may be found in N. A. C. A. Reports Nos. 93, 124, 182, and 244

thus giving values of specific weight of air

$W = 1.2255$ kg/m^3 $= 0.07651$ lb./ft.^{3}

and of density

$\rho = 0.12497$ in the French engineering or kilogram, meter, second system.

Or $\rho = 0.002378$ in the English or pound, foot, second system.

In absolute units	$P = CV^2\rho/2$
In kg/m^2 (m/s)	$P = .0625\ CV^2$
In kg/m^2 (km/h)	$P = .004822\ CV^2$
In lb./sq. ft. (ft./sec.)	$P = .001189\ CV^2$
In lb./sq. ft. (mi./hr.)	$P = .002558\ CV^2$

(Note that these constants are half as large as those used in Reports Nos. 93 and 124 and that the absolute coefficients used in this report are twice as large as the old coefficients. See Report No. 240 regarding change in absolute coefficients.)

INDEX

Three separate types of index are given—chart indexes which make it possible for a designer to select the wing section most suitable for the particular design in which he is interested; a group index which is arranged by countries and laboratories at which tests were conducted, each section also being designated by a reference number; and an alphabetical index.

CHART INDEX

In order that the designer may easily pick out a wing section which is suited to the type of airplane on which he is working, four index charts are given which classify the wings according to their aerodynamic and structural properties. In the charts of this report a lower-case letter is placed adjacent to the reference number giving Vl values, so that a comparison can be made without referring to the individual drawings. In this value V represents the wind velocity in feet per second and l a linear dimension, the chord length in feet.

In chart No. 17 the minimum drag, C_D is plotted against the L/D at one-fourth the maximum lift, C_L. This chart should be used in choosing a wing section for a high-speed airplane, the wing sections being more suited for this use the farther they are from the lower left-hand corner.

In chart No. 18 the mean spar depth is plotted against the maximum lift, C_L, in order to show the possible strength and lightness of the wing structure. The higher the maximum lift coefficient is the smaller will be the wing area and the lighter the structural weight, and in the same way the greater the depth of the spars the lighter will be their weight, so that the sections the greatest distance from the lower left-hand corner will give the lightest and strongest wings. The "mean spar depth" is obtained by assuming the spars to be located, respectively, at 15 and 60 per cent of the chord, and by dividing the sum of their thicknesses, in per cent of chord length at these points, by 2. In the case of sections tapered in ordinate or chord, or both, the mean spar depth of the maximum section (section at center of span) is taken in per cent of the constant chord for the ordinate taper, and of the mean chord for the chord taper, although accompanied, in certain airfoils, with an ordinate taper.

In chart No. 19 the maximum L/D is plotted against the maximum lift, C_L, which is of use in choosing the wing section for a slow and efficient airplane. In the same way as before the sections farthest from the lower left-hand corner are the best for this purpose.

In chart No. 20 the L/D at two-thirds the maximum lift, C_L is plotted against the maximum lift, C_L. This chart can be used for choosing a section that will give an efficient climb or a long range at cruising speed. The best sections for this purpose will be farthest from the lower left-hand corner of the chart.

CHART INDEX

INDEX OF ABBREVIATIONS

Name of laboratory at which tests were made	Abbreviations used on figures
Langley Memorial Aeronautical Laboratory (N. A. C. A.), U. S. A.	L. M. A. L.
Washington Navy Yard, U. S. A.	W. N. Y.
Engineering Division, McCook Field, U. S. A.	McC. F.
Royal Aircraft Establishment, Great Britain	R. A. E.
Service Technique de l'Aeronautique, France	S. T. Aé
Ergebnisse der Aerodynamischen Versuchsanstalt zu Göttingen, Germany	Göttingen.
Instituto Sperimentale Aeronautico, Italy	I. S. A.
Laboratorio della Direzione del Genio Aeronautico, Italy	D. G. A.
Laboratoire Aerotechnique de Rhode St. Genese-Bruxelles, Belgium	Rhode St. Genese.

GROUP INDEX

Airfoil	Wind tunnel where tested	Report reference number
UNITED STATES		
N. A. C. A. 81J	L. M. A. L	624
N. A. C. A.-CYH	do	625
B-2 (Modified M-80)	W. N. Y	626
C-2 (Modified M-80)	do	627
Boeing 103	do	628
N-22	do	629
N-23	do	630
N-24	do	631
Clark Y-15	McC. F	632
Clark Y-18	do	633
Clark Y-21	do	634
GREAT BRITAIN		
R. A. F. 25	R. A. E	635
R. A. F. 26	do	636
R. A. F. 27	do	637
R. A. F. 28	do	638
R. A. F. 34	do	639
GERMANY		
Göttingen 417a	Göttingen	640
Göttingen 456	do	641
Göttingen 458	do	642
Göttingen 461	do	[1] 430
Göttingen 462	do	643
Göttingen 464	do	644
Göttingen 481	do	645
481a	do	646
482	do	647
483	do	648
484	do	649
Göttingen 490	do	650
491	do	651
492	do	652
493	do	653
Göttingen 494	do	654
Göttingen 495	do	655
Göttingen 496	do	656
497	do	657
498	do	658
Göttingen 499	do	659
Göttingen 500	do	660
501	do	661
502	do	662
503	do	663
504	do	664
505	do	665
Göttingen 506	do	666
Göttingen 509	do	667
Göttingen 510	do	668
Göttingen 511	do	669
Göttingen 512	do	670
Göttingen 513	do	671
Göttingen 514	do	672
Göttingen 518	do	673
Göttingen 522	do	674
523	do	675
527	do	676
Göttingen 528	do	677
Göttingen 529	do	678
Göttingen 530	do	679
Göttingen 531	do	680
GERMANY—continued		
532	Göttingen	681
533	do	682
534	do	683
535	do	684
546	do	685
547	do	686
548	do	687
549	do	688
559	do	689
561	do	690
562	do	691
570	do	692
571	do	693
572	do	694
573	do	695
574	do	696
575	do	697
587	do	698
590	do	699
592	do	700
593	do	701
595	do	702
FRANCE		
Eiffel 400 (Pescara)	S. T. Aé. Lab	703
Eiffel 401 (Pescara)	do	704
Eiffel 403 (Pescara)	do	705
Eiffel 428 (Blériot)	do	706
Eiffel 430 (Lachassagne)	do	707
Eiffel 431 (Lachassagne)	do	708
St. Cyr 150 (Royer)	do	709
St. Cyr 151 (Royer)	do	710
St. Cyr 154 (Royer)	do	711
St. Cyr 155 (Royer)	do	712
St. Cyr 158 (Royer)	do	713
St. Cyr 159 (Royer)	do	714
St. Cyr 160 (Royer)	do	715
St. Cyr 161 (Royer)	do	716
St. Cyr 171 (Royer)	do	717
St. Cyr 172 (Royer)	do	718
St. Cyr 173 (Royer)	do	719
St. Cyr 175 (Royer)	do	720
St. Cyr 176 (Royer)	do	721
St. Cyr 177 (Royer)	do	722
St. Cyr 178 (Royer)	do	723
St. Cyr 185 (Monge)	do	724
St. Cyr 234 (Bartel 17-IC)	do	725
St. Cyr 236 (Bartel 26-IC)	do	726
St. Cyr 238 (Bartel 4-IC)	do	727
St. Cyr 241 (Bartel 37-IIC)	do	728
St. Cyr 244 (Bartel 35-IIIC)	do	729
BELGIUM		
Rhode St. Genese 28	Rhode St. Genese	730
Rhode St. Genese 30	do	731
Rhode St. Genese 32	do	732
Rhode St. Genese 34	do	733
Rhode St. Genese 36	do	734

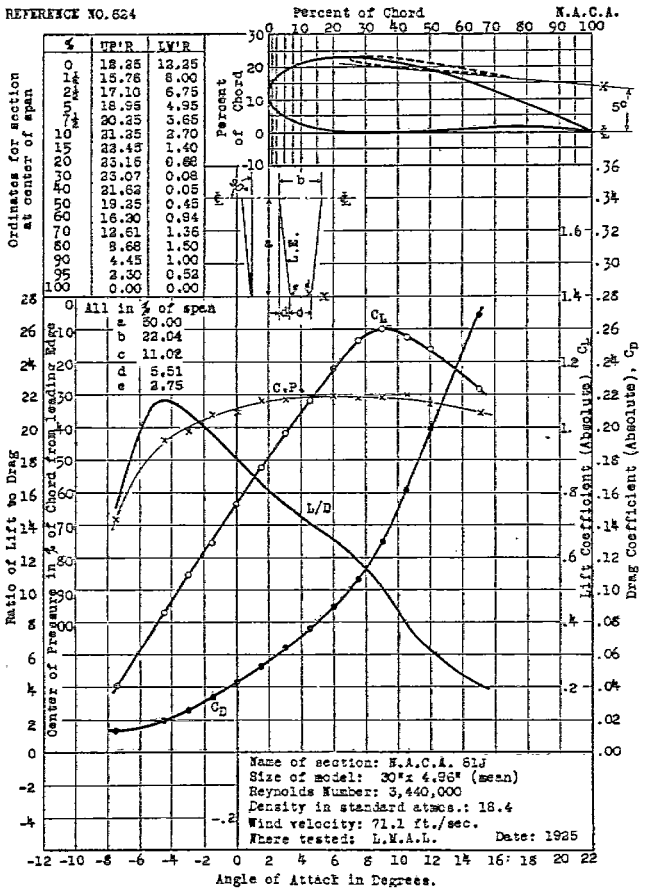
[1] Göttingen 461 of this series published in Report No. 182.

Airfoil	Wind tunnel where tested	Report reference number
ITALY		
I. S. A. 571	I. S. A.	735
I. S. A. 573	do	736
I. S. A. 607	do	737
I. S. A. 608	do	738
I. S. A. 666	do	739
I. S. A. 691	do	740
I. S. A. 692	do	741
I. S. A. 802	do	742
I. S. A. 808	do	743
I. S. A. 843	do	744
I. S. A. 906	do	745
I. S. A. 909	do	746
I. S. A. 923a	do	747
ITALY—continued		
I. S. A. 923b	I. S. A.	748
I. S. A. 960	do	749
I. S. A. 961	do	750
I. S. A. 962	do	751
I. S. A. 993	do	752
I. S. A. 994a	do	753
I. S. A. 994c	do	754
Bambino 5	D. G. A.	755
Bambino 6	do	756
Bambino, E: 7	do	757
D. G. A. 1138	do	758
D. G. A. 1182	do	759

ALPHABETICAL INDEX

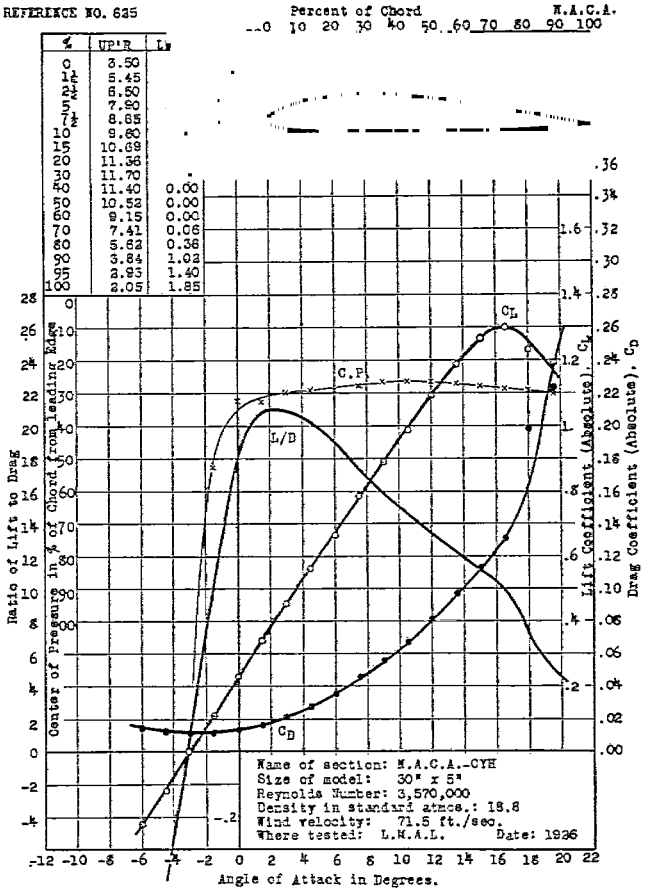
[1] Gottingen 461 of this series published in Report No. 182.

REFERENCE NO. 624



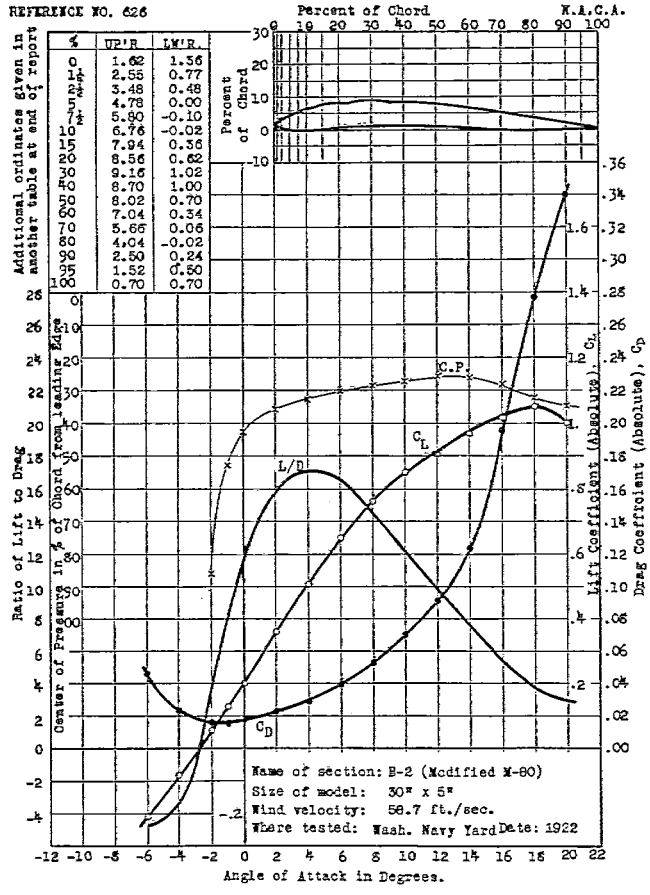
%	UP'R	LW'R
0	18.25	18.25
1¼	15.76	8.00
2½	17.10	6.75
5	18.95	4.95
7½	20.25	3.65
10	21.25	2.70
15	22.45	1.40
20	23.15	0.68
30	23.07	0.08
40	21.62	0.05
50	19.25	0.45
60	16.30	0.94
70	12.61	1.36
80	8.68	1.50
90	4.45	1.00
95	2.30	0.52
100	0.00	0.00

REFERENCE NO. 625



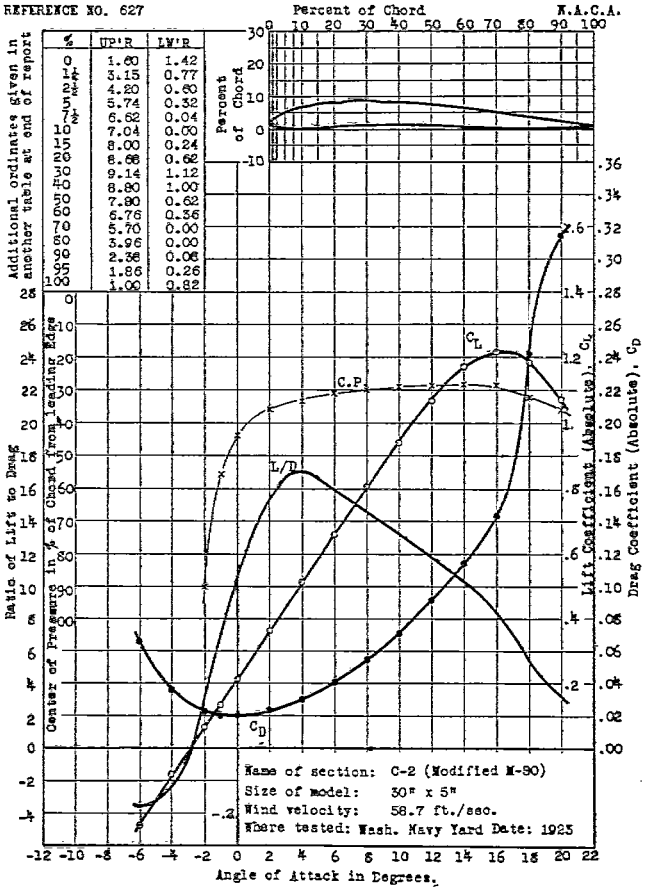
%	UP'R	Lo
0	3.50	
1¼	5.45	
2½	6.50	
5	7.80	
7½	8.85	
10	9.80	
15	10.68	
20	11.36	
30	11.70	
40	11.40	0.00
50	10.52	0.00
60	9.15	0.00
70	7.41	0.06
80	5.22	0.36
90	3.84	1.02
95	2.93	1.40
100	2.05	1.85

REFERENCE NO. 626



%	UP'R	LW'R.
0	1.62	1.36
1¼	2.55	0.77
2½	3.48	0.48
5	4.78	0.00
7½	5.80	-0.10
10	6.76	-0.02
15	7.94	0.36
20	8.56	0.62
30	9.16	1.02
40	8.70	1.00
50	8.02	0.70
60	7.04	0.34
70	5.66	0.06
80	4.04	-0.02
90	2.50	0.24
95	1.52	0.50
100	0.70	0.70

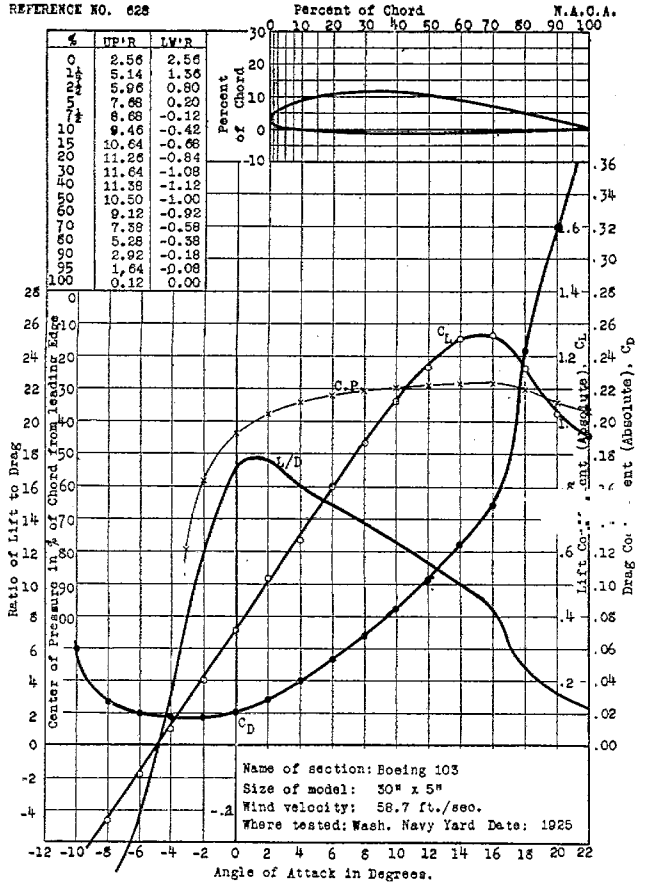
REFERENCE NO. 627



%	UP'R	LW'R
0	1.60	1.42
1¼	3.15	0.77
2½	4.20	0.60
5	5.74	0.32
7½	6.62	0.04
10	7.04	0.00
15	8.00	0.24
20	8.66	0.62
30	9.14	1.12
40	8.80	1.00
50	7.80	0.62
60	6.76	0.36
70	5.70	0.00
80	3.96	0.00
90	2.36	0.06
95	1.86	0.26
100	1.00	0.82

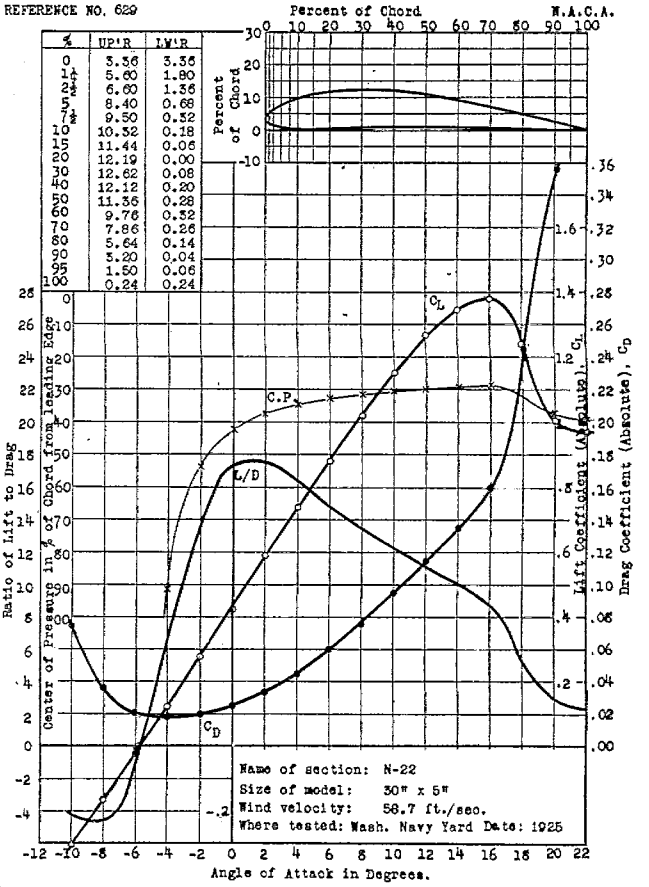
REFERENCE NO. 628

%	UP'R	LW'R
0	2.56	2.56
1¼	5.14	1.36
2½	5.96	0.80
5	7.68	0.20
7½	8.68	-0.12
10	9.46	-0.42
15	10.64	-0.66
20	11.26	-0.84
30	11.64	-1.08
40	11.38	-1.12
50	10.50	-1.00
60	9.12	-0.92
70	7.38	-0.58
80	5.28	-0.38
90	2.92	-0.18
95	1.64	-0.08
100	0.12	0.00



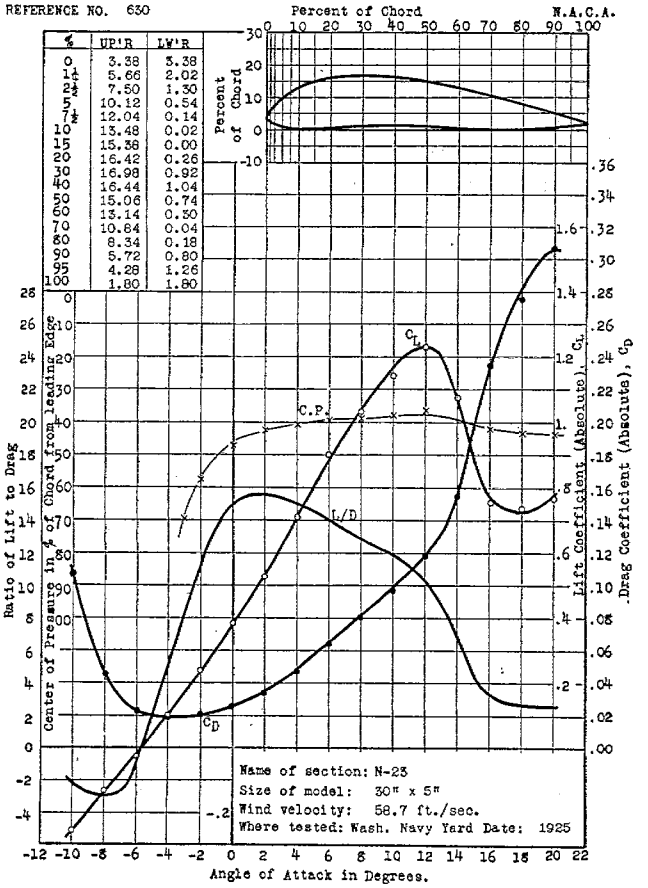
REFERENCE NO. 629

%	UP'R	LW'R
0	3.36	3.36
1¼	5.60	1.90
2½	6.60	1.36
5	8.40	0.68
7½	9.50	0.32
10	10.32	0.18
15	11.44	0.06
20	12.19	0.00
30	12.62	0.08
40	12.12	0.20
50	11.36	0.28
60	9.76	0.32
70	7.86	0.26
80	5.64	0.14
90	3.20	0.04
95	1.50	0.06
100	0.24	0.24



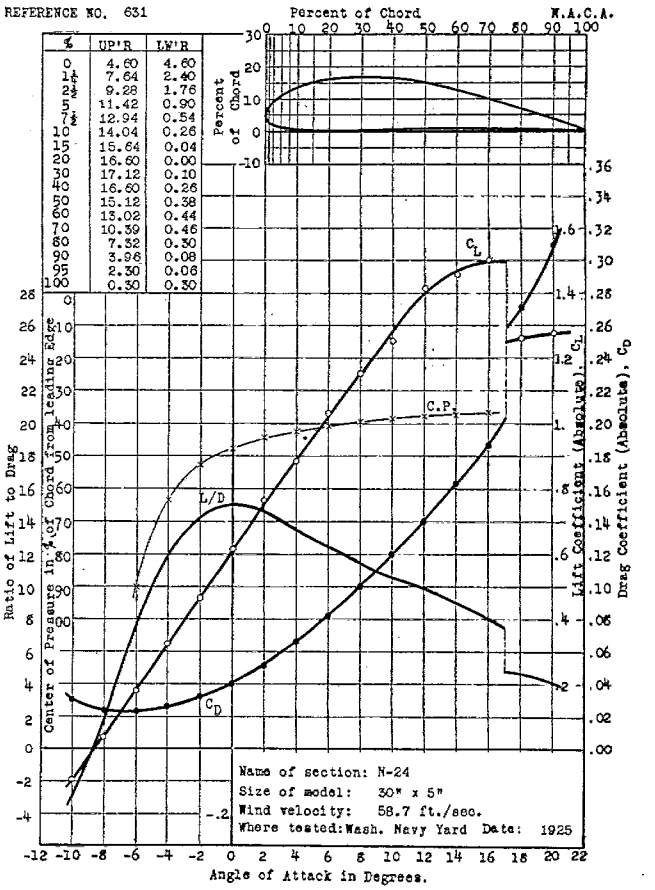
REFERENCE NO. 630

%	UP'R	LW'R
0	3.38	3.38
1¼	5.66	2.02
2½	7.50	1.30
5	10.12	0.54
7½	12.04	0.14
10	13.48	0.02
15	15.38	0.00
20	16.42	0.26
30	16.98	0.92
40	16.44	1.04
50	15.06	0.74
60	13.14	0.30
70	10.84	0.04
80	8.34	0.18
90	5.72	0.80
95	4.28	1.26
100	1.80	1.80



REFERENCE NO. 631

%	UP'R	LW'R
0	4.60	4.60
1¼	7.64	2.40
2½	9.28	1.76
5	11.42	0.90
7½	12.94	0.54
10	14.04	0.26
15	15.64	0.04
20	16.60	0.00
30	17.12	0.10
40	16.60	0.26
50	15.12	0.38
60	13.02	0.44
70	10.39	0.46
80	7.32	0.30
90	3.96	0.08
95	2.30	0.06
100	0.30	0.30



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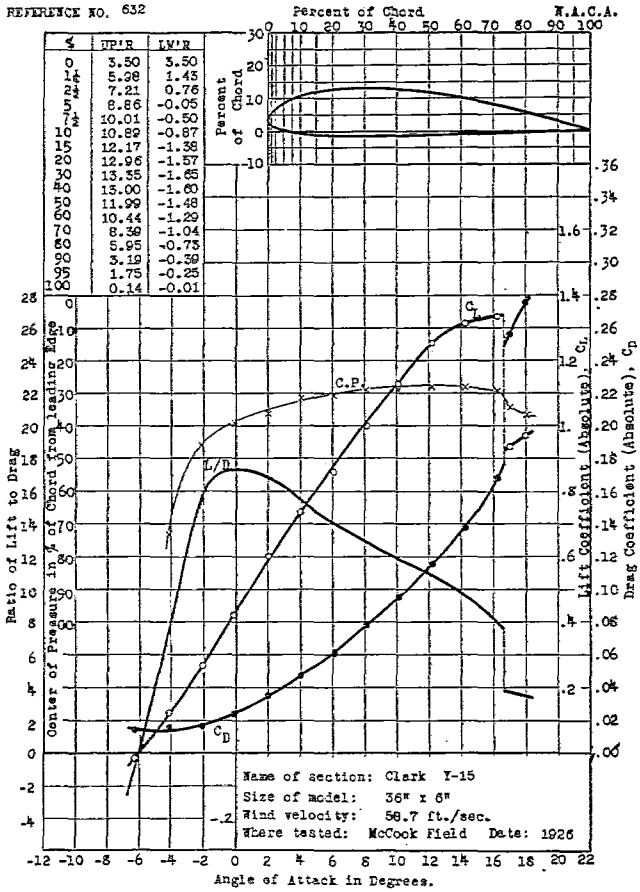
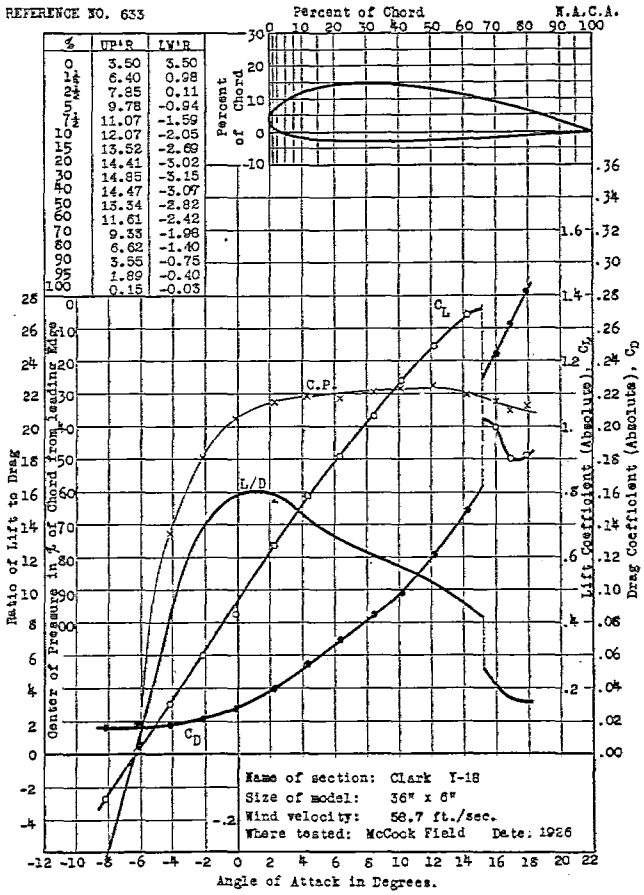


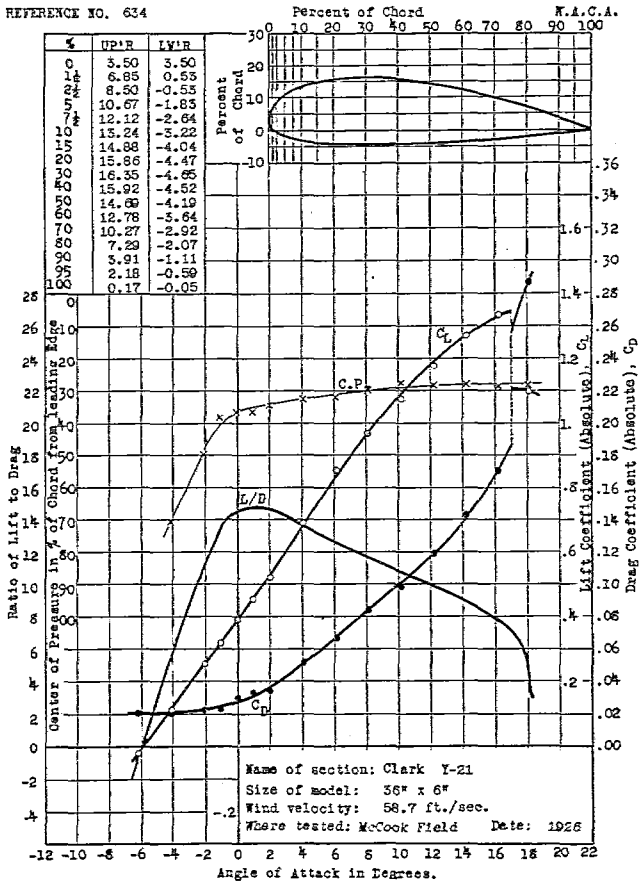
%	UPPER	LOWER
0	3.50	3.50
1¼	5.98	1.45
2½	7.21	0.76
5	8.86	-0.05
7½	10.01	-0.50
10	10.82	-0.87
15	12.17	-1.38
20	12.96	-1.57
30	13.55	-1.65
40	15.00	-1.60
50	11.99	-1.48
60	10.44	-1.29
70	8.36	-1.04
80	5.95	-0.73
90	3.19	-0.39
95	1.75	-0.25
100	0.14	-0.01

REFERENCE NO. 633



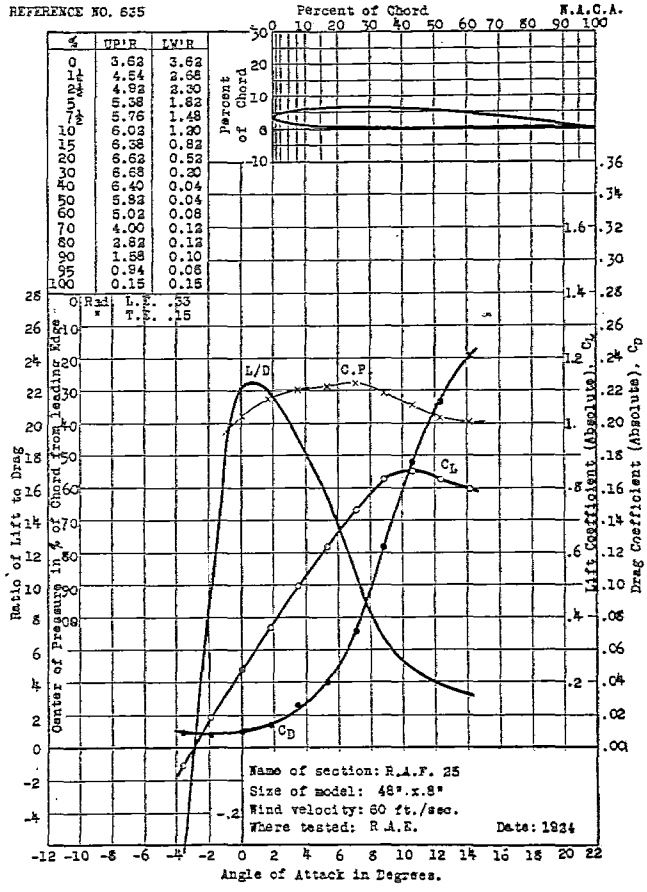
%	UPPER	LOWER
0	3.50	3.50
1¼	6.40	0.98
2½	7.85	0.11
5	9.78	-0.94
7½	11.07	-1.59
10	12.07	-2.05
15	13.52	-2.69
20	14.41	-3.02
30	14.86	-3.15
40	14.47	-3.07
50	13.34	-2.82
60	11.61	-2.42
70	9.33	-1.98
80	6.62	-1.40
90	3.55	-0.75
95	1.89	-0.40
100	0.15	-0.03

REFERENCE NO. 634



%	UPPER	LOWER
0	3.50	3.50
1¼	6.85	0.53
2½	8.50	-0.53
5	10.67	-1.85
7½	12.12	-2.64
10	13.24	-3.22
15	14.88	-4.04
20	15.86	-4.47
30	16.35	-4.65
40	15.92	-4.52
50	14.69	-4.19
60	12.78	-3.64
70	10.27	-2.92
80	7.29	-2.07
90	3.91	-1.11
95	2.18	-0.59
100	0.17	-0.05

REFERENCE NO. 635

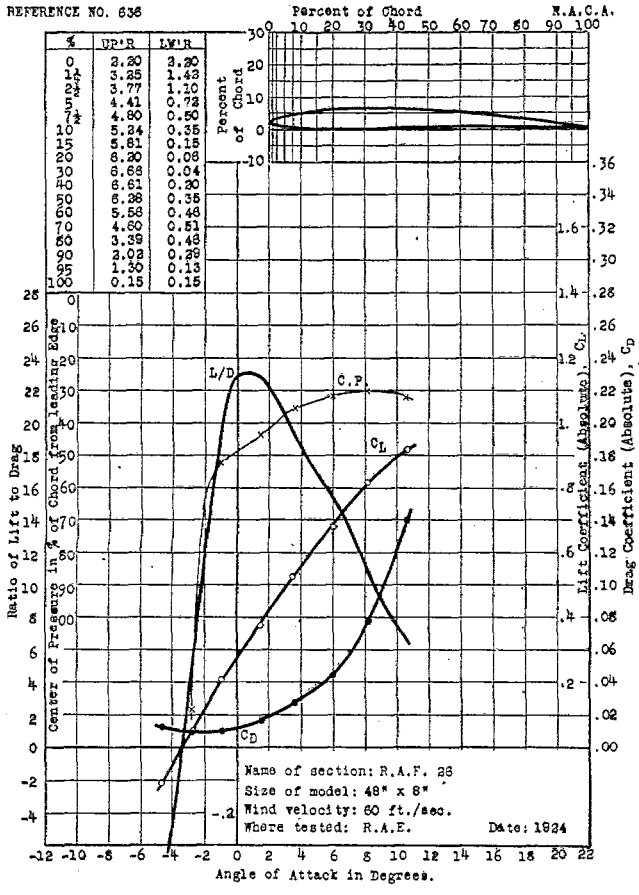


%	UPPER	LOWER
0	3.62	3.62
1¼	4.54	2.68
2½	4.92	2.30
5	5.38	1.82
7½	5.76	1.48
10	6.03	1.20
15	6.38	0.82
20	6.62	0.58
30	6.68	0.20
40	6.40	0.04
50	5.82	0.04
60	5.02	0.08
70	4.00	0.12
80	2.82	0.12
90	1.58	0.10
95	0.94	0.06
100	0.15	0.15

Rad. L.E. .53
T.E. .15

REFERENCE NO. 636

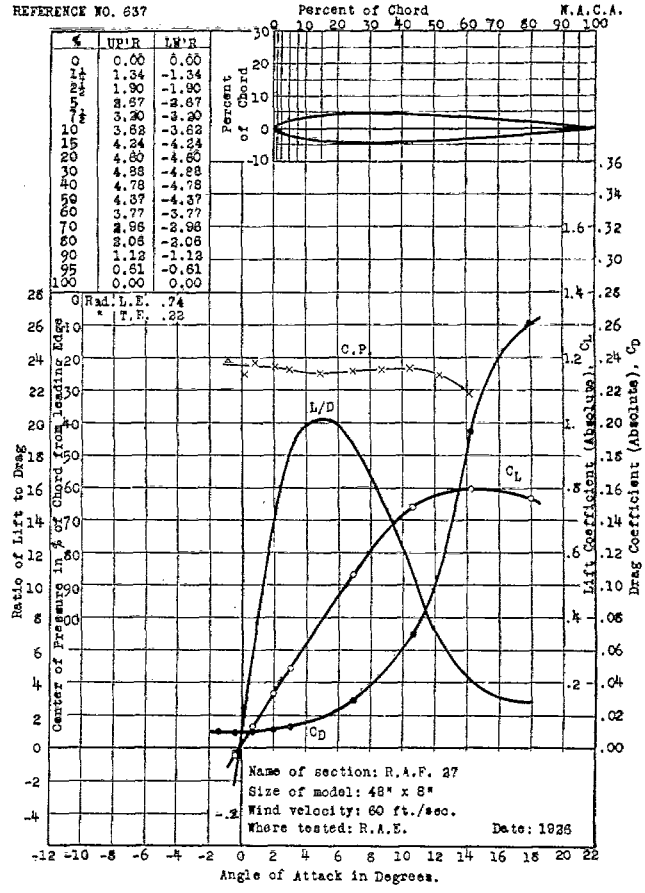
%	UP'R	LW'R
0	3.20	3.20
1¼	3.25	1.43
2½	3.77	1.10
5	4.41	0.72
7½	4.80	0.50
10	5.24	0.35
15	5.81	0.15
20	6.20	0.06
30	6.68	0.04
40	6.61	0.20
50	6.38	0.35
60	5.58	0.46
70	4.60	0.51
80	3.39	0.48
90	2.02	0.29
95	1.30	0.13
100	0.15	0.15



REFERENCE NO. 637

%	UP'R	LW'R
0	0.00	0.00
1¼	1.34	-1.34
2½	1.90	-1.90
5	2.67	-2.67
7½	3.30	-3.30
10	3.62	-3.62
15	4.24	-4.24
20	4.60	-4.60
30	4.88	-4.88
40	4.78	-4.78
50	4.37	-4.37
60	3.77	-3.77
70	2.96	-2.96
80	2.06	-2.06
90	1.12	-1.12
95	0.61	-0.61
100	0.00	0.00

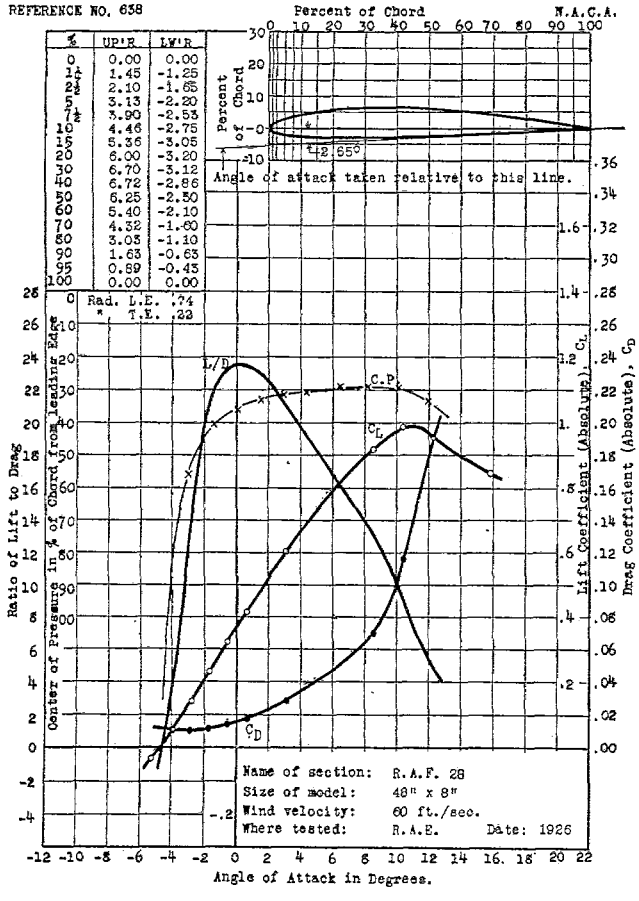
Rad. L.E. .74
T.E. .22



REFERENCE NO. 638

%	UP'R	LW'R
0	0.00	0.00
1¼	1.45	-1.25
2½	2.10	-1.65
5	3.13	-2.20
7½	3.90	-2.53
10	4.46	-2.75
15	5.36	-3.05
20	6.00	-3.20
30	6.70	-3.12
40	6.72	-2.86
50	6.25	-2.50
60	5.40	-2.10
70	4.52	-1.60
80	3.05	-1.10
90	1.63	-0.63
95	0.89	-0.45
100	0.00	0.00

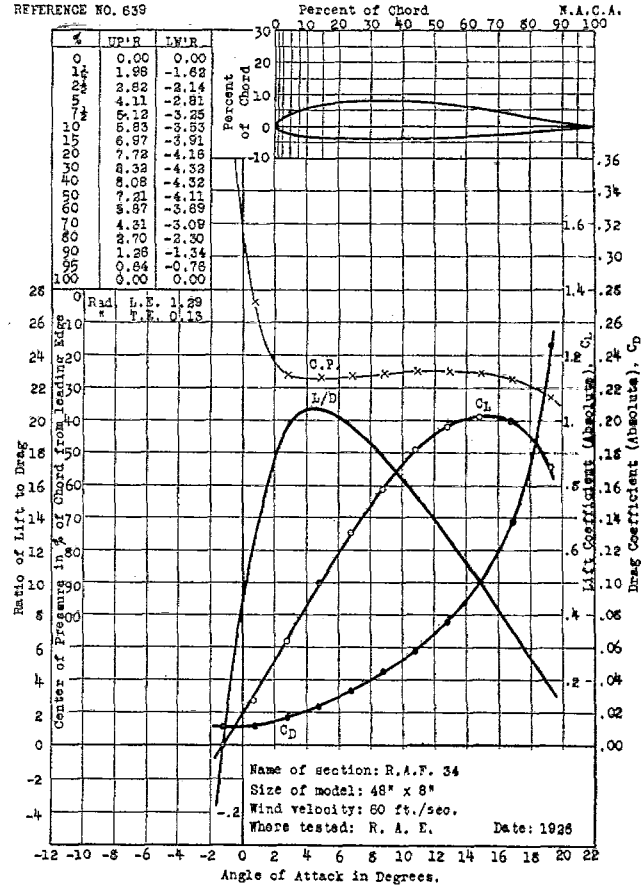
Rad. L.E. .74
T.E. .22



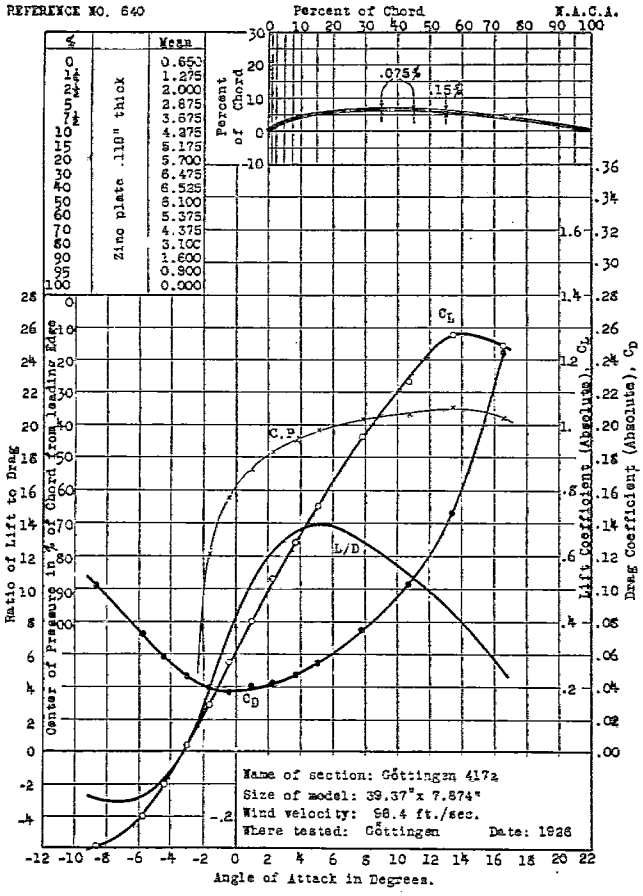
REFERENCE NO. 639

%	UP'R	LW'R
0	0.00	0.00
1¼	1.98	-1.62
2½	2.82	-2.14
5	4.11	-2.81
7½	5.12	-3.25
10	5.83	-3.53
15	6.97	-3.91
20	7.72	-4.16
30	8.32	-4.33
40	8.08	-4.32
50	7.21	-4.11
60	5.97	-3.69
70	4.31	-3.09
80	2.70	-2.30
90	1.26	-1.34
95	0.64	-0.76
100	0.00	0.00

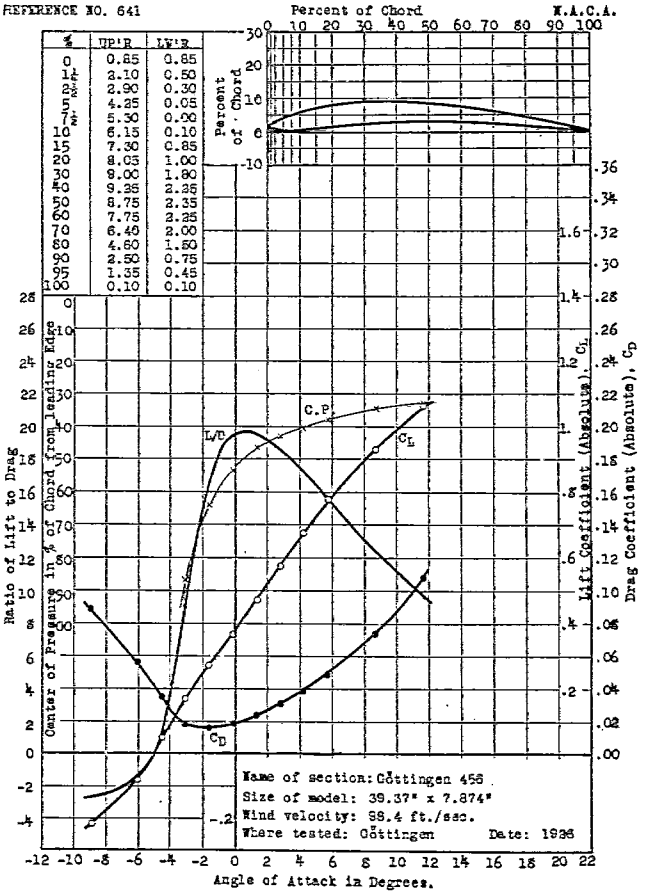
Rad. L.E. 1.29
T.E. 0.13



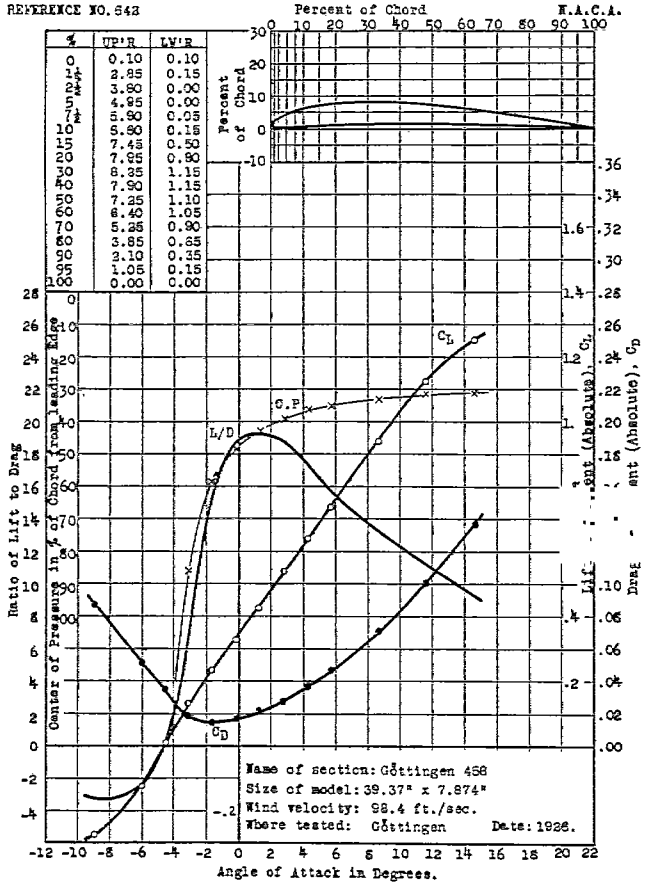
REFERENCE NO. 640



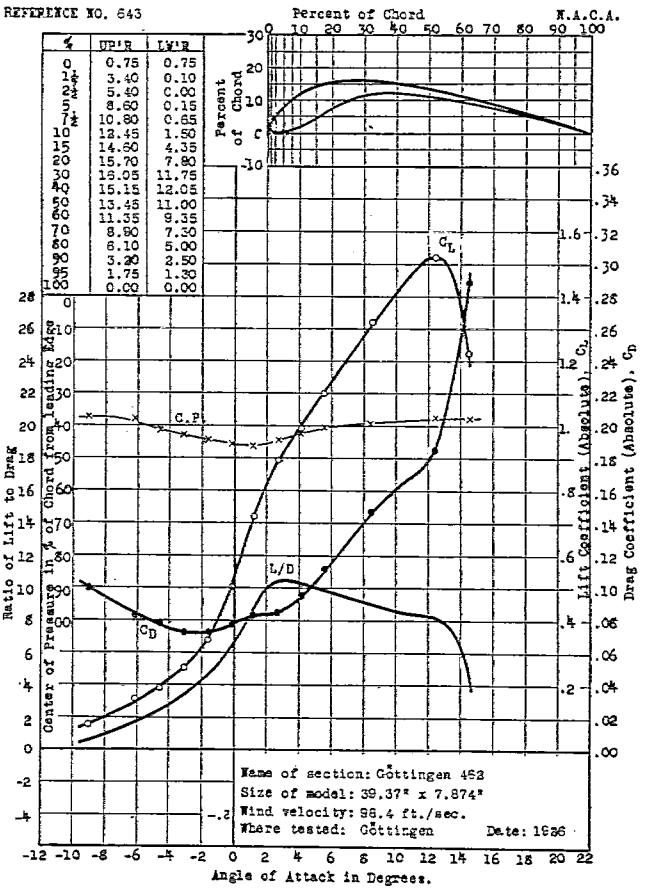
REFERENCE NO. 641



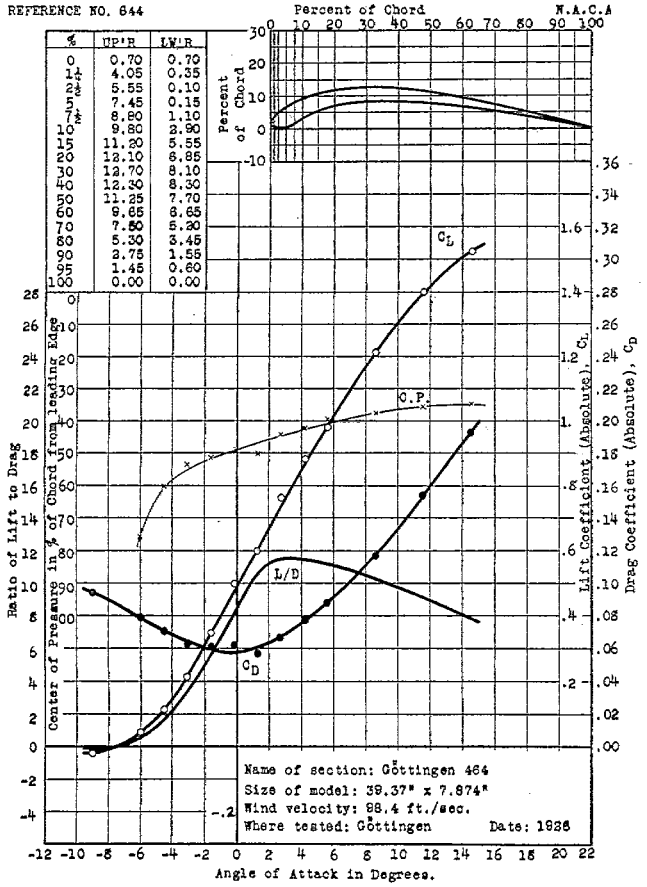
REFERENCE NO. 642



REFERENCE NO. 643

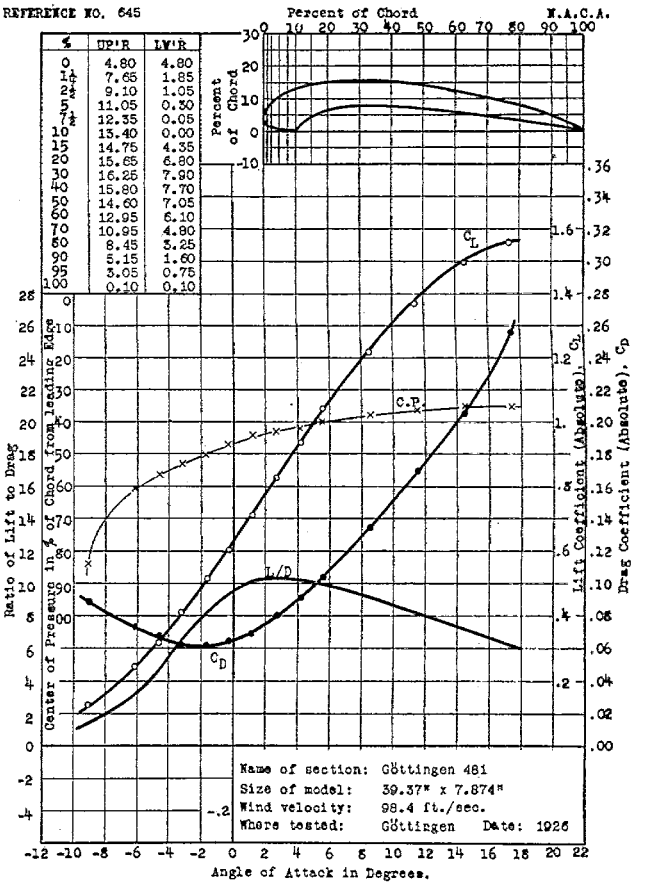


REFERENCE NO. 644



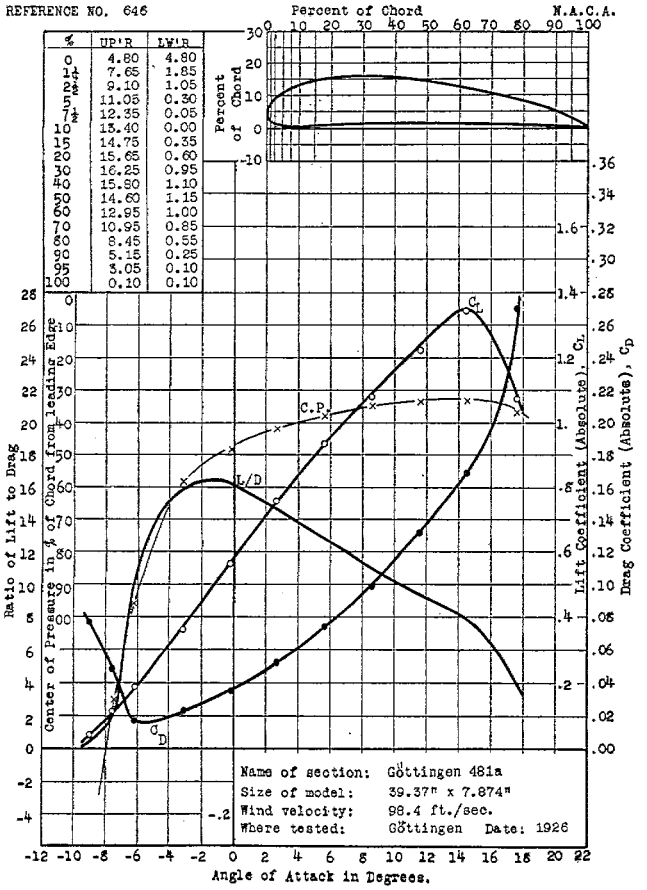
%	UP'R	LW'R
0	0.70	0.70
1¼	4.05	0.35
2½	5.55	0.10
5	7.45	0.15
7½	8.80	1.10
10	9.80	2.90
15	11.20	5.55
20	12.10	6.85
30	12.70	8.10
40	12.30	8.30
50	11.25	7.70
60	9.65	6.65
70	7.50	5.20
80	5.30	3.45
90	2.75	1.55
95	1.45	0.60
100	0.00	0.00

REFERENCE NO. 645



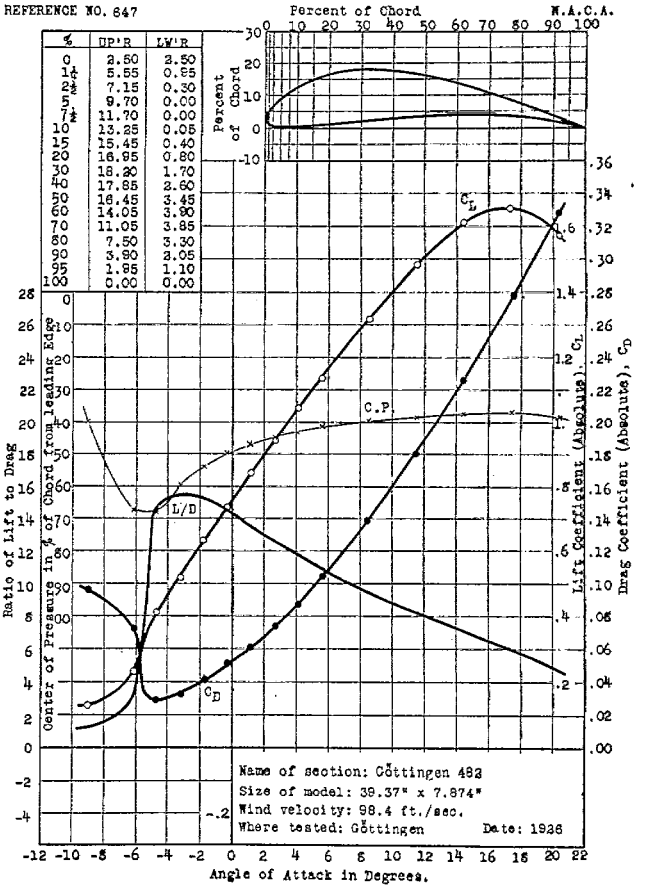
%	UP'R	LW'R
0	4.80	4.80
1¼	7.65	1.85
2½	9.10	1.05
5	11.05	0.30
7½	12.35	0.05
10	13.40	0.00
15	14.75	0.35
20	15.65	0.60
30	16.25	0.95
40	15.80	1.10
50	14.60	1.15
60	12.95	1.00
70	10.95	0.85
80	8.45	0.55
90	5.15	0.25
95	3.05	0.10
100	0.10	0.10

REFERENCE NO. 646



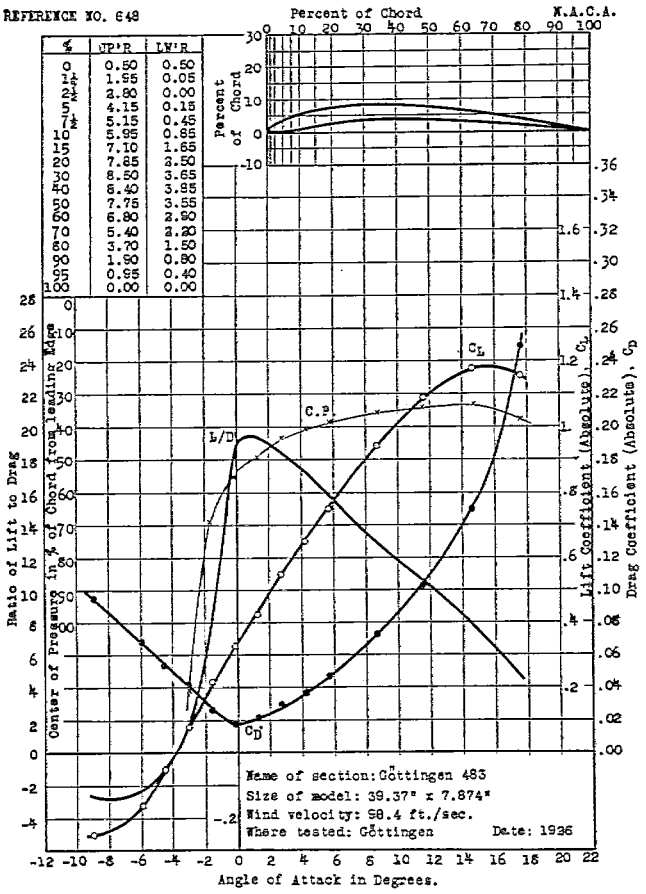
%	UP'R	LW'R
0	4.80	4.80
1¼	7.65	1.85
2½	9.10	1.05
5	11.05	0.30
7½	12.35	0.05
10	13.40	0.00
15	14.75	0.35
20	15.65	0.60
30	16.25	0.95
40	15.80	1.10
50	14.60	1.15
60	12.95	1.00
70	10.95	0.85
80	8.45	0.55
90	5.15	0.25
95	3.05	0.10
100	0.10	0.10

REFERENCE NO. 647



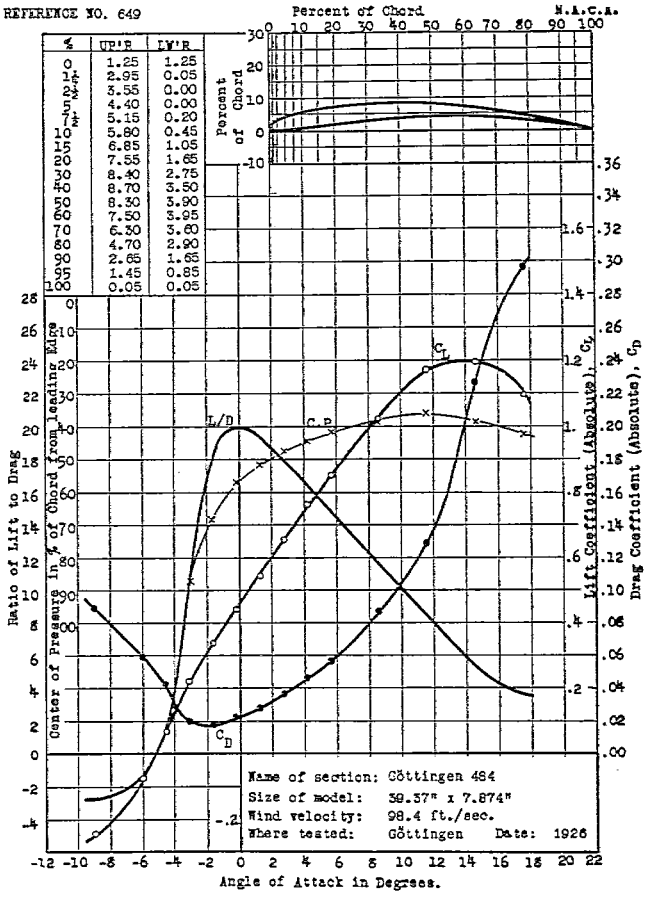
%	UP'R	LW'R
0	2.50	2.50
1¼	5.55	0.85
2½	7.15	0.30
5	9.70	0.00
7½	11.70	0.00
10	13.25	0.05
15	15.45	0.40
20	16.95	0.80
30	18.20	1.70
40	17.85	2.60
50	16.45	3.45
60	14.05	3.90
70	11.05	3.85
80	7.50	3.30
90	3.90	2.05
95	1.85	1.10
100	0.00	0.00

REFERENCE NO. 648



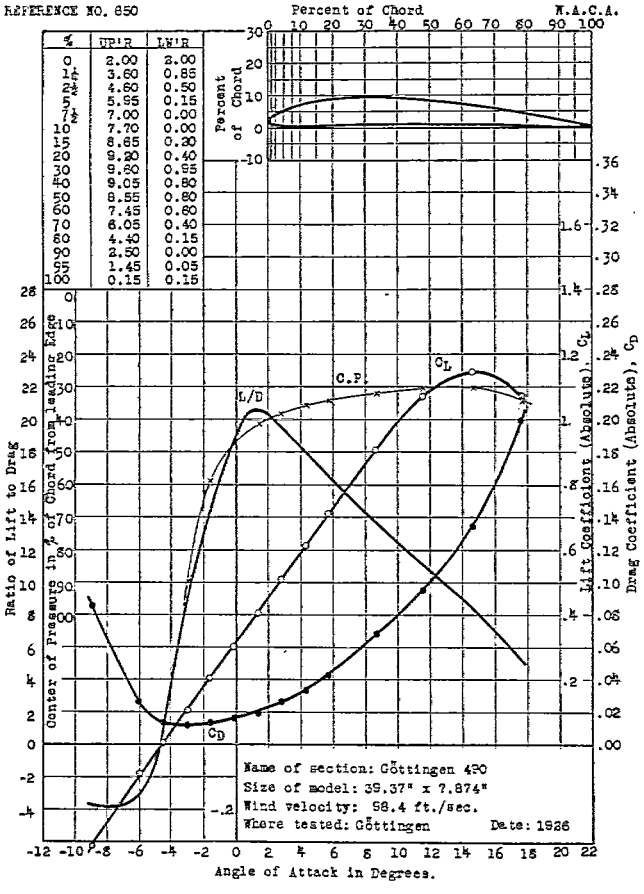
%	UP'R	LW'R
0	0.50	0.50
1¼	1.95	0.05
2½	2.80	0.00
5	4.15	0.15
7½	5.15	0.45
10	5.95	0.85
15	7.10	1.65
20	7.85	2.50
30	8.50	3.65
40	8.40	3.85
50	7.75	3.55
60	6.80	2.80
70	5.40	2.20
80	3.70	1.55
90	1.90	0.80
95	0.95	0.45
100	0.00	0.00

REFERENCE NO. 649



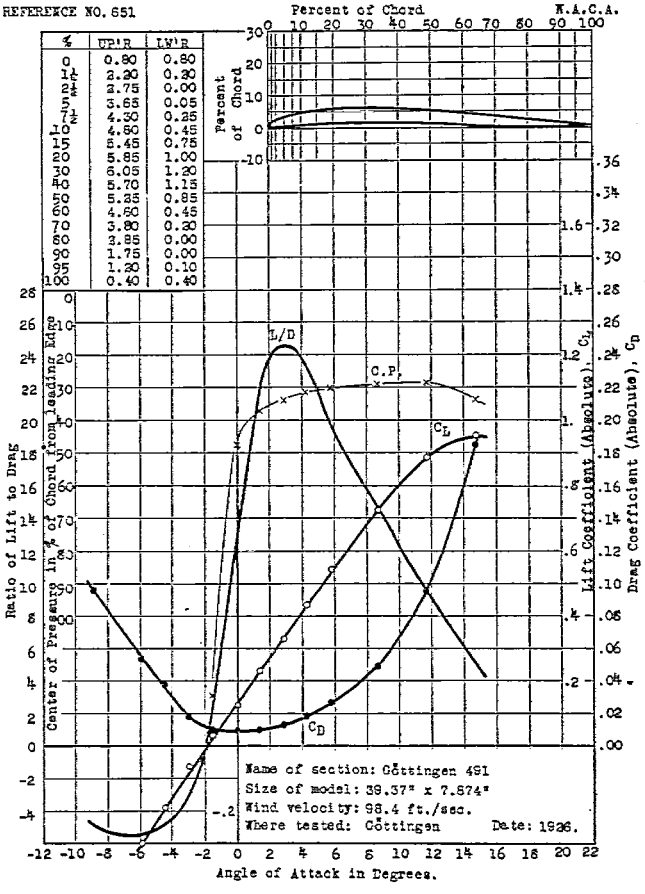
%	UP'R	LW'R
0	1.25	1.25
1¼	2.95	0.05
2½	3.55	0.00
5	4.40	0.00
7½	5.15	0.20
10	5.80	0.45
15	6.85	1.05
20	7.55	1.65
30	8.40	2.75
40	8.70	3.50
50	8.30	3.90
60	7.50	3.95
70	6.30	3.60
80	4.70	2.90
90	2.65	1.65
95	1.45	0.85
100	0.05	0.05

REFERENCE NO. 650



%	UP'R	LW'R
0	2.00	2.00
1¼	3.60	0.85
2½	4.60	0.50
5	5.95	0.15
7½	7.00	0.00
10	7.70	0.00
15	8.65	0.30
20	9.20	0.40
30	9.60	0.55
40	9.05	0.80
50	8.55	0.80
60	7.45	0.60
70	6.05	0.40
80	4.45	0.15
90	2.50	0.00
95	1.45	0.05
100	0.15	0.15

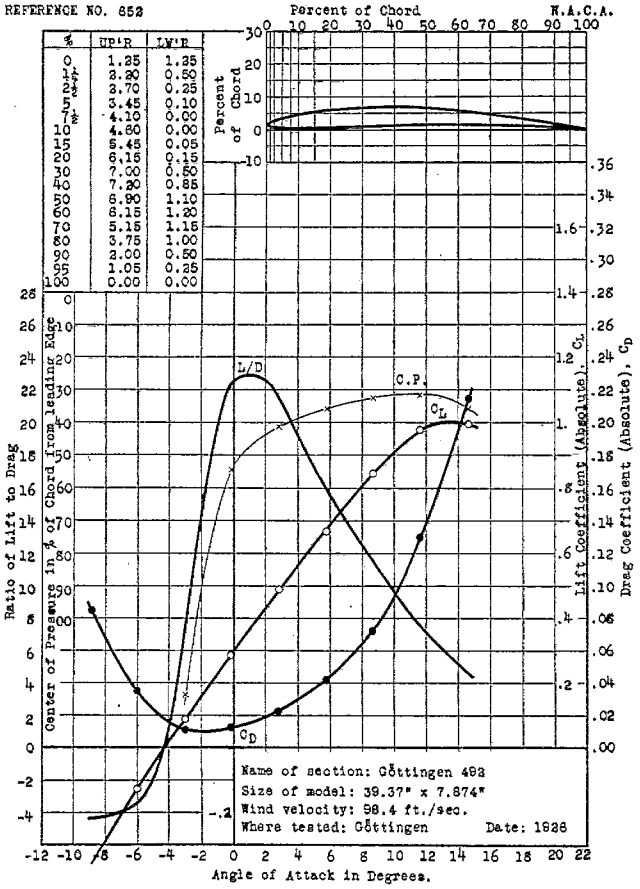
REFERENCE NO. 651



%	UP'R	LW'R
0	0.80	0.80
1¼	2.20	0.20
2½	2.75	0.00
5	3.65	0.05
7½	4.30	0.25
10	4.80	0.45
15	5.45	0.75
20	5.85	1.00
30	6.05	1.20
40	5.70	1.15
50	5.25	0.85
60	4.60	0.45
70	3.80	0.20
80	2.85	0.00
90	1.75	0.00
95	1.20	0.10
100	0.40	0.40

REFERENCE NO. 652

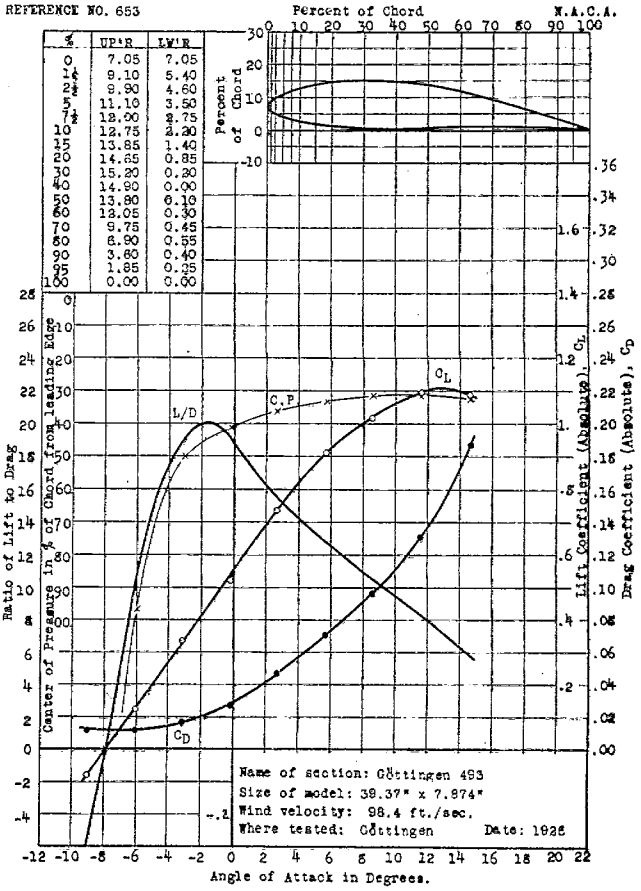
%	UP'R	LW'R
0	1.25	1.25
1¼	3.20	0.50
2½	3.70	0.25
5	3.45	0.10
7½	4.10	0.00
10	4.60	0.00
15	5.45	0.05
20	6.15	0.15
30	7.00	0.50
40	7.20	0.85
50	6.90	1.10
60	6.15	1.20
70	5.15	1.15
80	3.75	1.00
90	2.00	0.50
95	1.05	0.25
100	0.00	0.00



Name of section: Göttingen 493
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1928

REFERENCE NO. 653

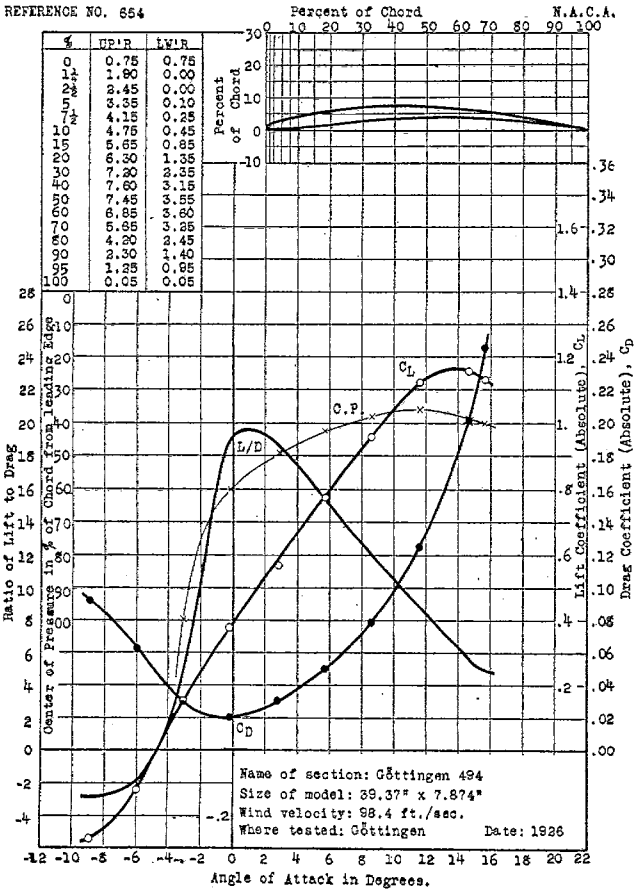
%	UP'R	LW'R
0	7.05	7.05
1¼	9.10	5.40
2½	9.90	4.60
5	11.10	3.50
7½	12.00	2.75
10	12.75	2.20
15	13.85	1.40
20	14.65	0.85
30	15.20	0.30
40	14.90	0.00
50	13.80	0.10
60	12.05	0.30
70	9.75	0.45
80	6.90	0.55
90	3.60	0.40
95	1.85	0.25
100	0.00	0.00



Name of section: Göttingen 493
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1928

REFERENCE NO. 654

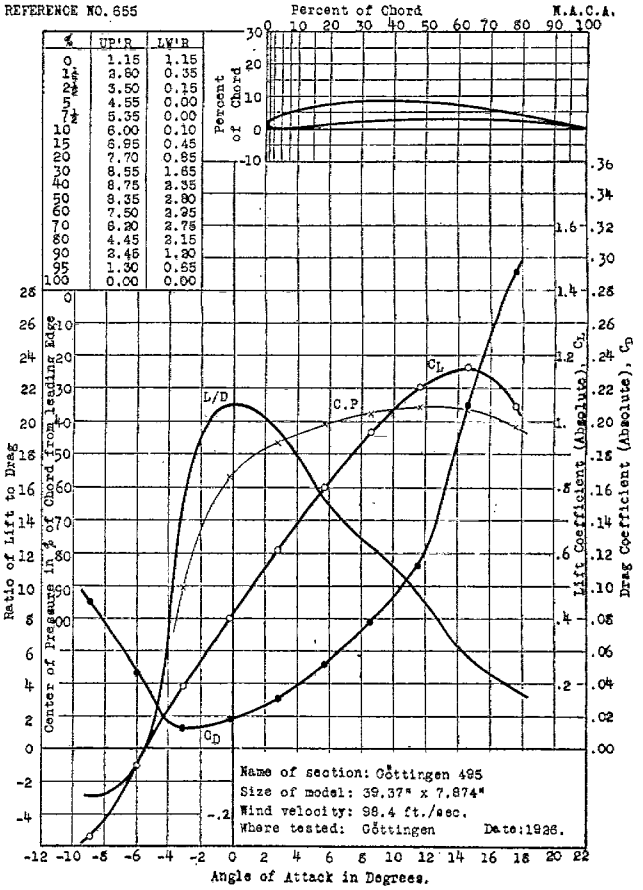
%	UP'R	LW'R
0	0.75	0.75
1¼	1.80	0.00
2½	2.45	0.00
5	3.35	0.10
7½	4.15	0.25
10	4.75	0.45
15	5.65	0.85
20	6.30	1.35
30	7.20	2.35
40	7.60	3.15
50	7.45	3.55
60	6.85	3.60
70	5.85	3.25
80	4.20	2.45
90	2.30	1.40
95	1.25	0.95
100	0.05	0.05



Name of section: Göttingen 494
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926

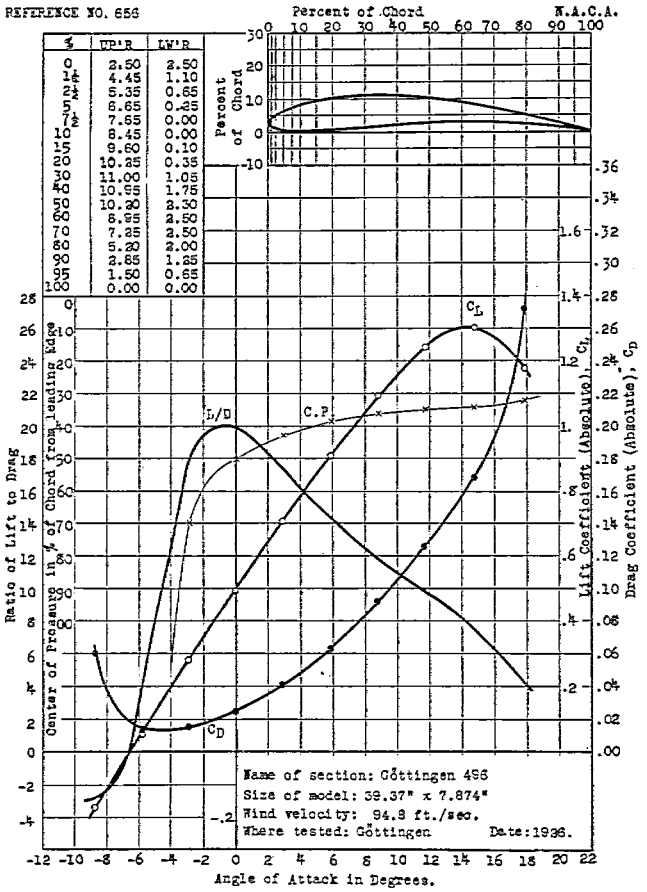
REFERENCE NO. 655

%	UP'R	LW'R
0	1.15	1.15
1¼	2.80	0.35
2½	3.50	0.15
5	4.55	0.00
7½	5.35	0.00
10	6.00	0.10
15	6.95	0.45
20	7.70	0.85
30	8.55	1.65
40	8.75	2.35
50	8.35	2.80
60	7.50	2.95
70	6.20	2.75
80	4.45	2.15
90	2.45	1.20
95	1.30	0.55
100	0.00	0.00



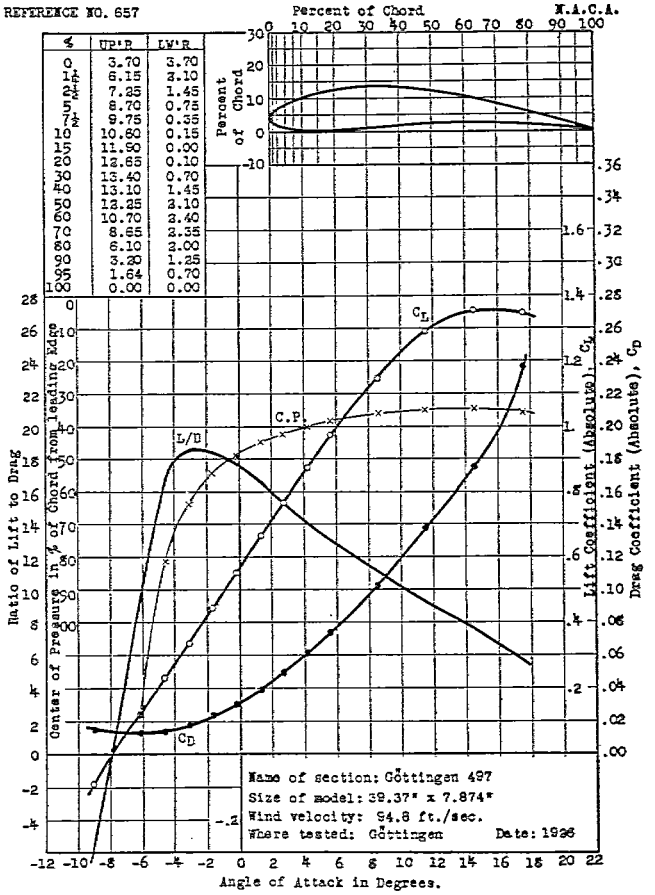
Name of section: Göttingen 495
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926.

REFERENCE NO. 656



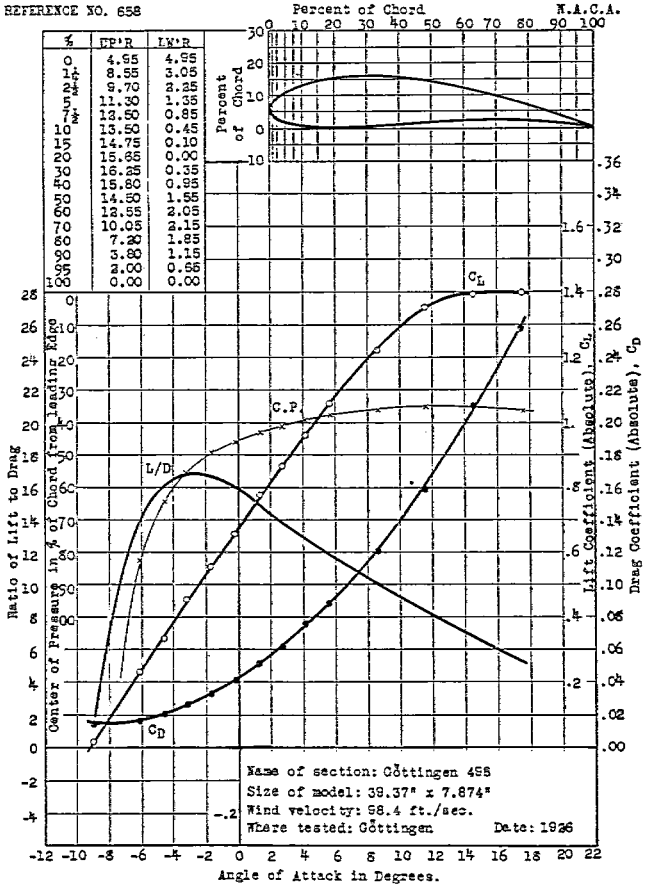
%	UP'R	LW'R
0	2.50	2.50
1¼	4.45	1.10
2½	5.35	0.65
5	6.65	0.25
7½	7.65	0.00
10	8.45	0.00
15	9.60	0.10
20	10.25	0.35
30	11.00	1.05
40	10.95	1.75
50	10.30	2.30
60	8.95	2.50
70	7.25	2.50
80	5.20	2.00
90	2.85	1.25
95	1.50	0.65
100	0.00	0.00

REFERENCE NO. 657



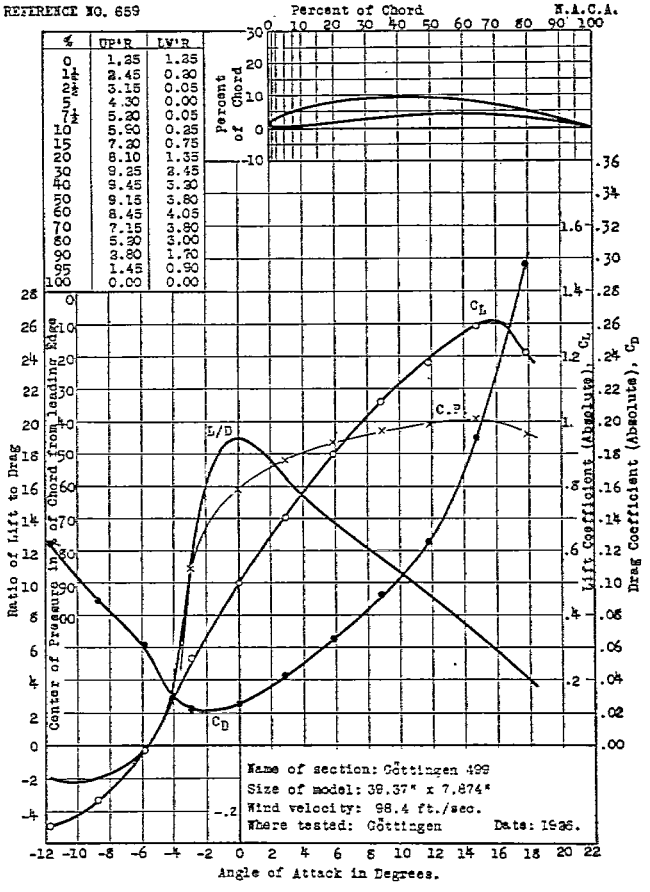
%	UP'R	LW'R
0	3.70	3.70
1¼	6.15	3.10
2½	7.25	1.45
5	8.70	0.75
7½	9.75	0.35
10	10.60	0.15
15	11.90	0.00
20	12.65	0.10
30	13.40	0.70
40	13.10	1.45
50	12.25	2.10
60	10.70	2.40
70	8.65	2.35
80	6.10	2.00
90	3.20	1.25
95	1.64	0.70
100	0.00	0.00

REFERENCE NO. 658



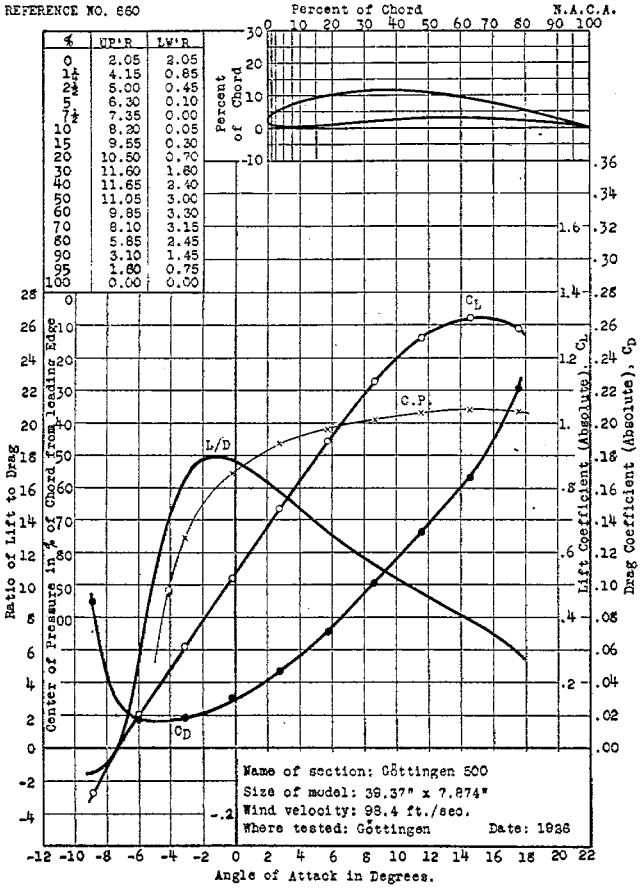
%	UP'R	LW'R
0	4.95	4.95
1¼	8.55	3.05
2½	9.70	2.25
5	11.30	1.35
7½	13.50	0.85
10	13.50	0.45
15	14.75	0.10
20	15.65	0.00
30	16.25	0.35
40	15.80	0.95
50	14.50	1.55
60	12.55	2.05
70	10.05	2.15
80	7.20	1.85
90	3.80	1.15
95	2.00	0.66
100	0.00	0.00

REFERENCE NO. 659



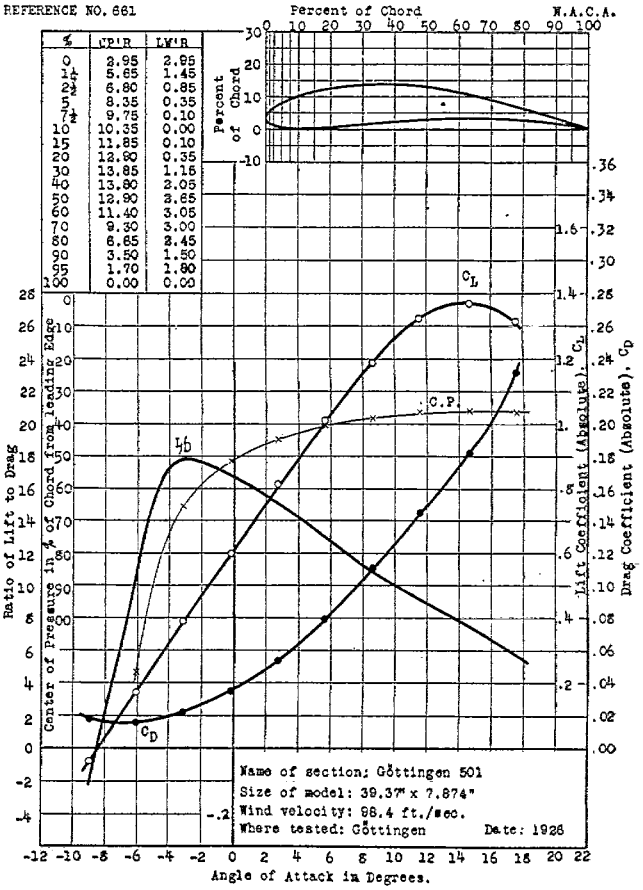
%	UP'R	LW'R
0	1.85	1.85
1¼	2.45	0.80
2½	3.15	0.05
5	4.30	0.00
7½	5.20	0.05
10	5.60	0.25
15	7.30	0.75
20	8.10	1.35
30	9.25	2.45
40	9.45	3.30
50	9.15	3.80
60	8.45	4.05
70	7.15	3.80
80	5.30	3.00
90	3.80	1.70
95	1.45	0.90
100	0.00	0.00

REFERENCE NO. 660



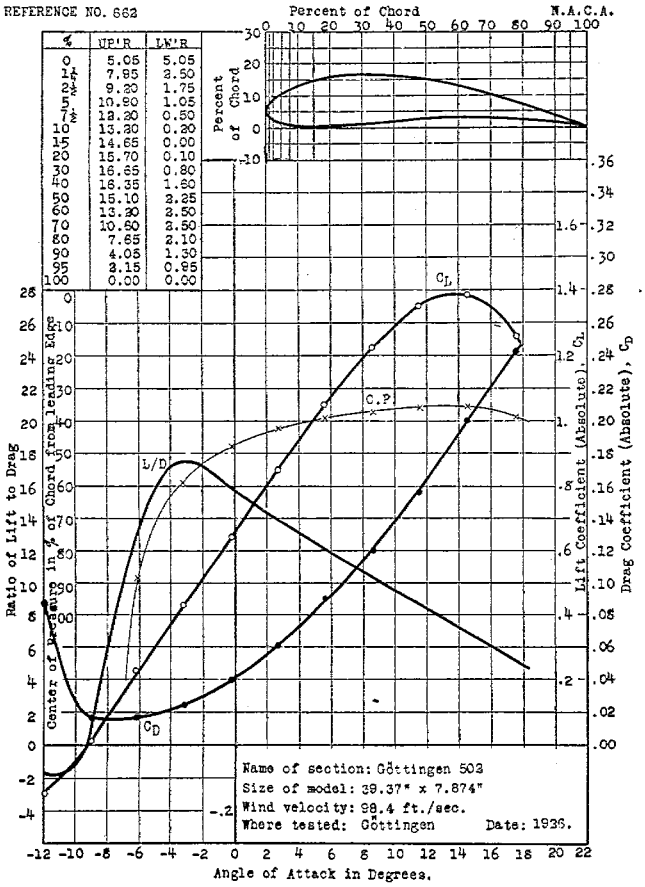
%	UP'R	LW'R
0	2.05	2.05
1¼	4.15	0.85
2½	5.00	0.45
5	6.30	0.10
7½	7.35	0.00
10	8.20	0.05
15	9.55	0.30
20	10.50	0.70
30	11.60	1.60
40	11.65	2.40
50	11.05	3.00
60	9.85	3.30
70	8.10	3.15
80	5.85	2.45
90	3.10	1.45
95	1.80	0.75
100	0.00	0.00

REFERENCE NO. 661



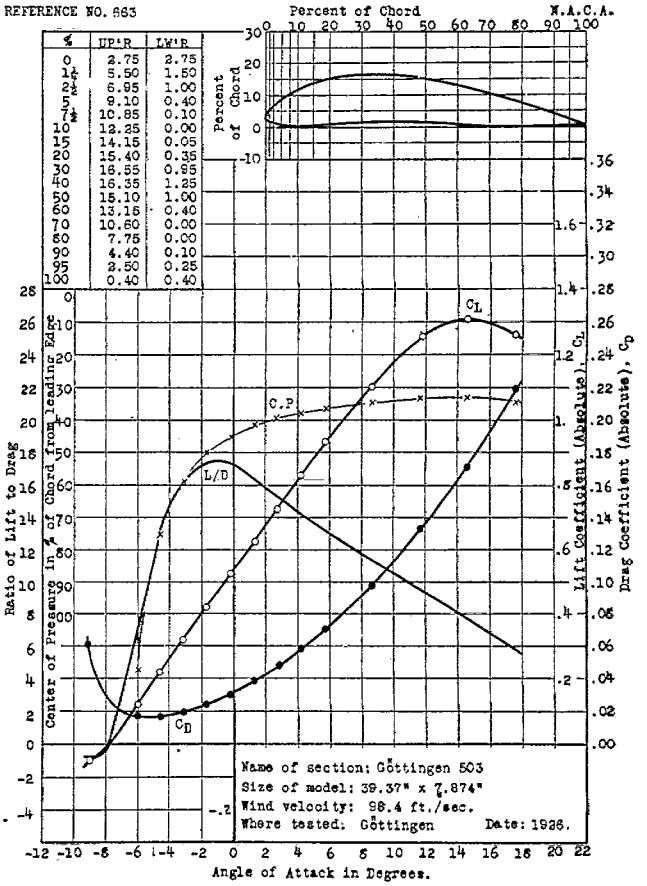
%	UP'R	LW'R
0	2.95	2.95
1¼	5.65	1.45
2½	6.80	0.85
5	8.35	0.35
7½	9.75	0.10
10	10.35	0.00
15	11.85	0.10
20	12.90	0.35
30	13.85	1.15
40	13.80	2.05
50	12.90	2.85
60	11.40	3.05
70	9.30	3.00
80	6.65	2.45
90	3.50	1.50
95	1.70	1.80
100	0.00	0.00

REFERENCE NO. 662



%	UP'R	LW'R
0	5.05	5.05
1¼	7.85	3.50
2½	9.20	1.75
5	10.90	1.05
7½	12.20	0.50
10	13.20	0.20
15	14.65	0.00
20	15.70	0.10
30	16.65	0.80
40	16.35	1.80
50	15.10	2.25
60	13.20	2.50
70	10.80	2.50
80	7.85	2.10
90	4.05	1.30
95	2.15	0.85
100	0.00	0.00

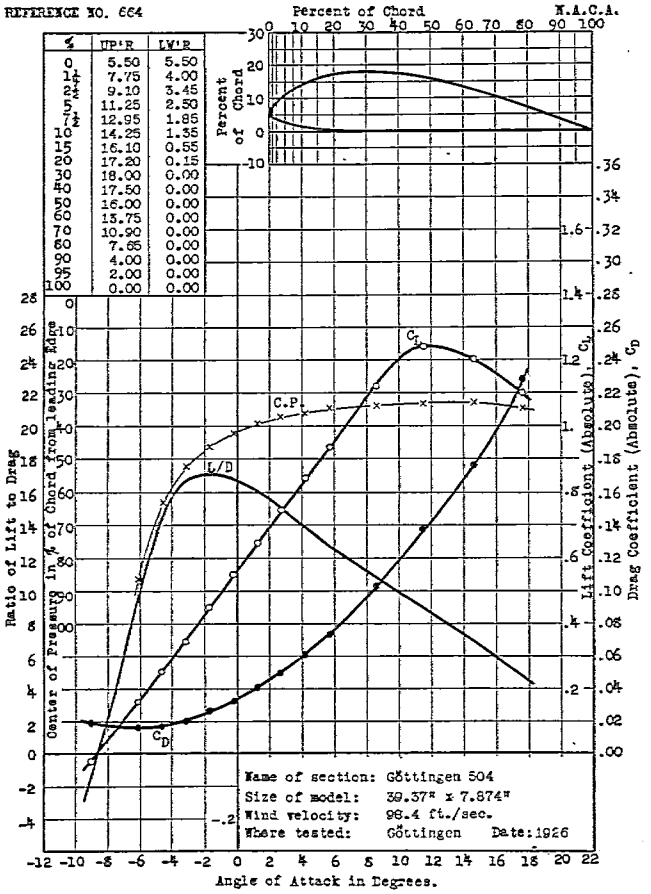
REFERENCE NO. 663



%	UP'R	LW'R
0	2.75	2.75
1¼	5.50	1.50
2½	6.95	1.00
5	9.10	0.40
7½	10.85	0.10
10	12.25	0.00
15	14.15	0.05
20	15.40	0.35
30	16.55	0.95
40	16.35	1.25
50	15.10	1.00
60	13.15	0.40
70	10.60	0.00
80	7.75	0.00
90	4.40	0.10
95	2.50	0.25
100	0.40	0.40

REFERENCE NO. 664

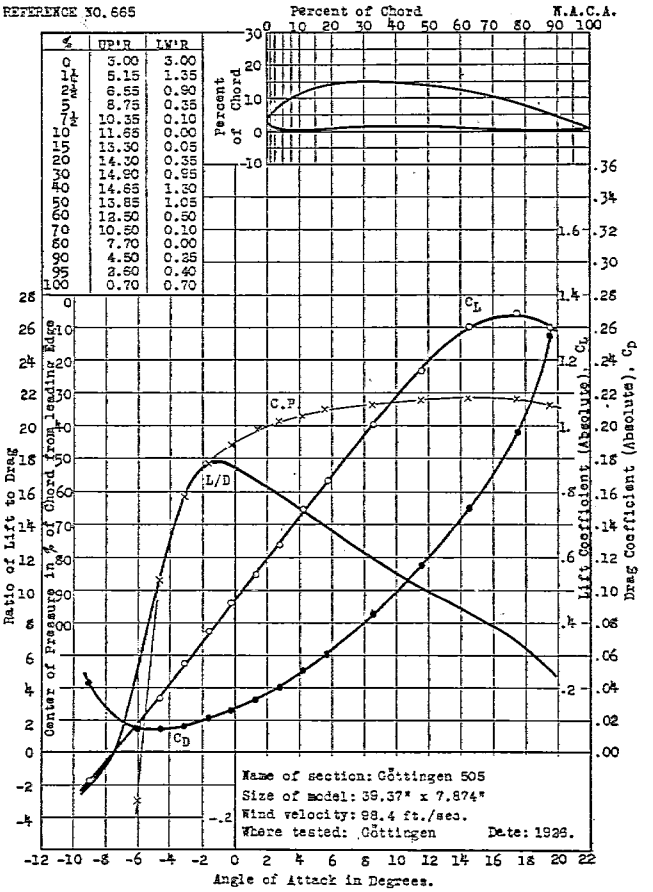
%	UPPER	LOWER
0	5.50	5.50
1¼	7.75	4.00
2½	9.10	3.45
5	11.25	2.50
7½	12.95	1.85
10	14.25	1.35
15	16.10	0.55
20	17.20	0.15
30	18.00	0.00
40	17.50	0.00
50	16.00	0.00
60	13.75	0.00
70	10.90	0.00
80	7.65	0.00
90	4.00	0.00
95	2.00	0.00
100	0.00	0.00



Name of section: Göttingen 504
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926

REFERENCE NO. 665

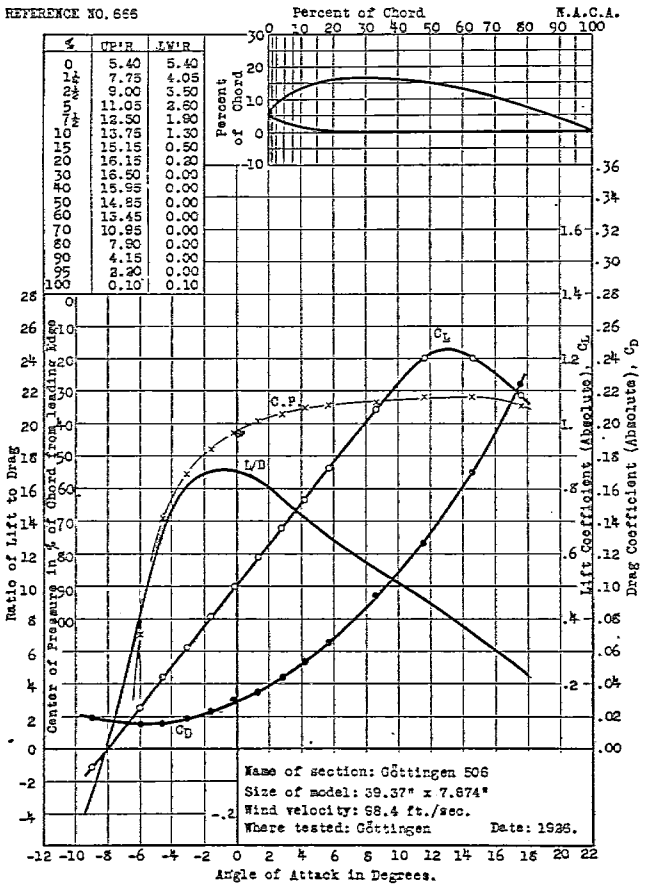
%	UPPER	LOWER
0	3.00	3.00
1¼	5.15	1.35
2½	6.65	0.90
5	8.75	0.35
7½	10.35	0.10
10	11.65	0.00
15	13.30	0.05
20	14.30	0.35
30	14.90	0.95
40	14.65	1.30
50	13.85	1.05
60	12.50	0.50
70	10.50	0.10
80	7.70	0.00
90	4.50	0.25
95	2.60	0.40
100	0.70	0.70



Name of section: Göttingen 505
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926.

REFERENCE NO. 666

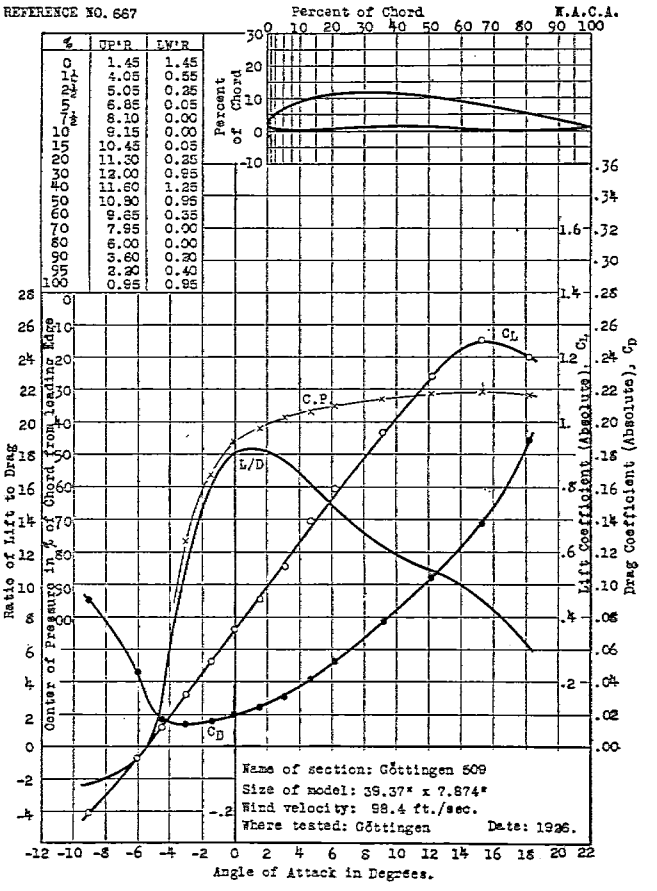
%	UPPER	LOWER
0	5.40	5.40
1¼	7.75	4.05
2½	9.00	3.50
5	11.05	2.80
7½	12.50	1.90
10	13.75	1.30
15	15.15	0.50
20	16.15	0.80
30	16.50	0.00
40	15.95	0.00
50	14.85	0.00
60	13.45	0.00
70	10.95	0.00
80	7.90	0.00
90	4.15	0.00
95	2.30	0.00
100	0.10	0.10



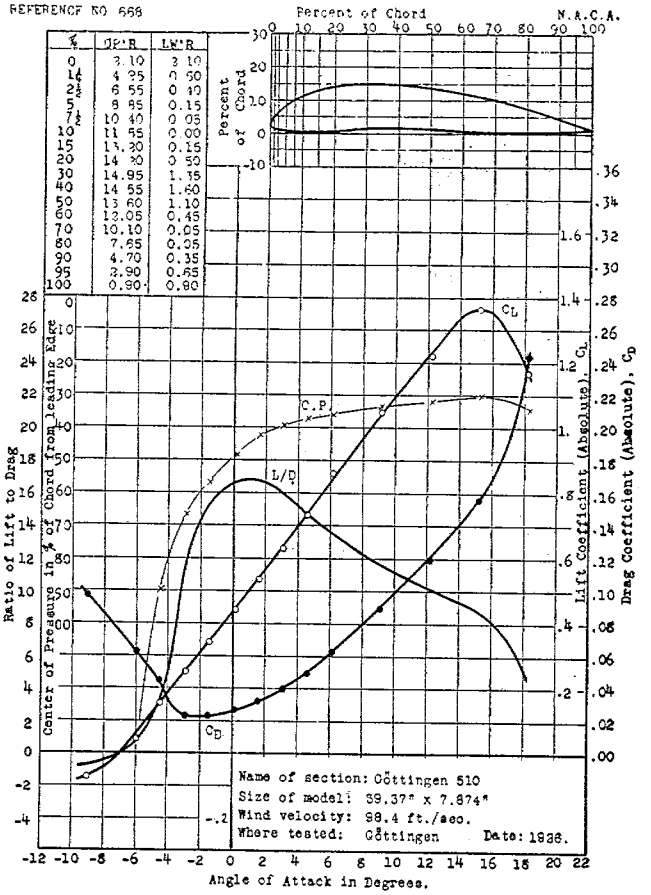
Name of section: Göttingen 506
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926.

REFERENCE NO. 667

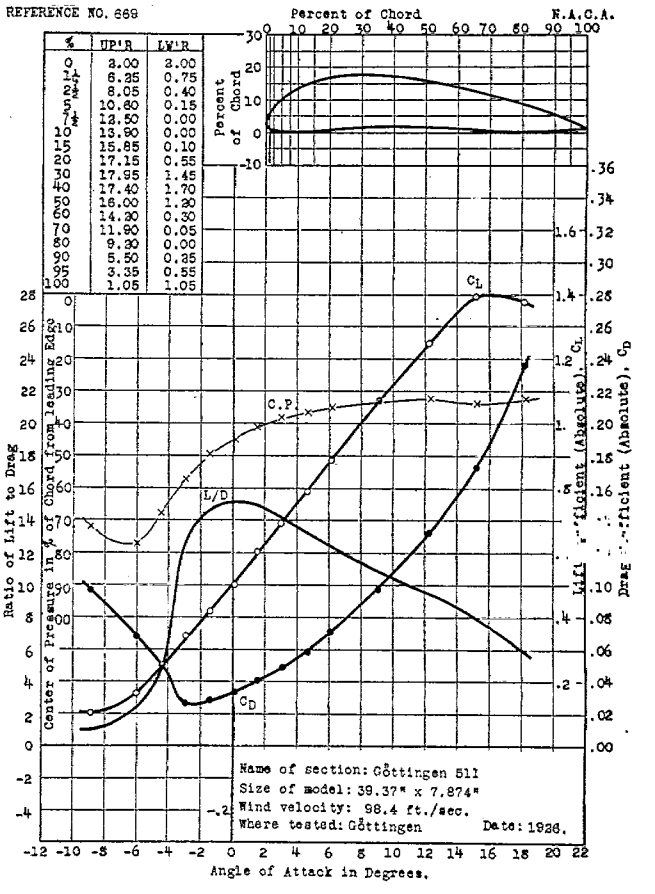
%	UPPER	LOWER
0	1.45	1.45
1¼	4.05	0.55
2½	5.05	0.25
5	6.85	0.05
7½	8.10	0.00
10	9.15	0.00
15	10.45	0.05
20	11.30	0.25
30	12.00	0.95
40	11.80	1.25
50	10.90	0.95
60	9.65	0.35
70	7.95	0.00
80	6.00	0.00
90	3.60	0.20
95	2.20	0.40
100	0.95	0.95



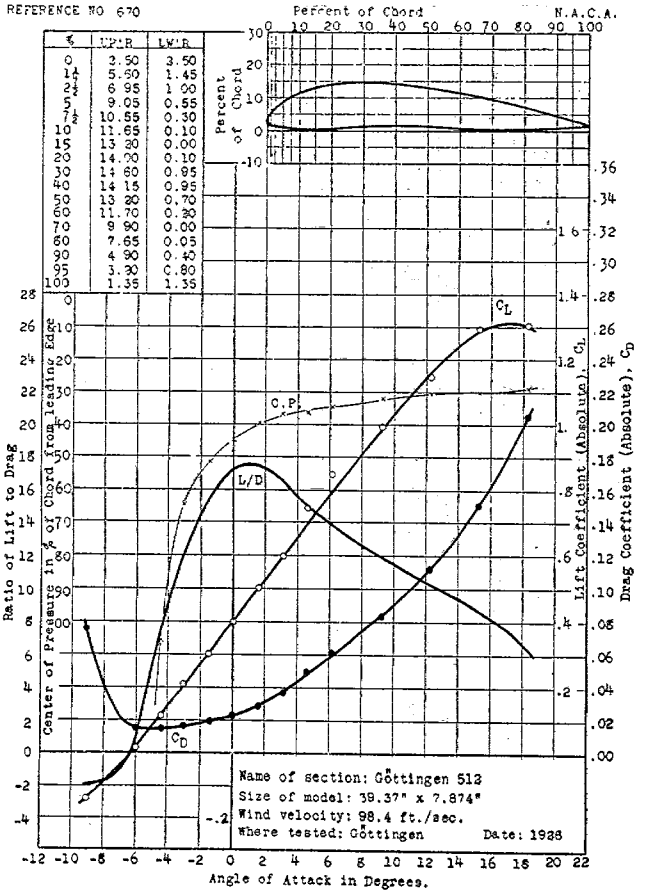
Name of section: Göttingen 509
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926.



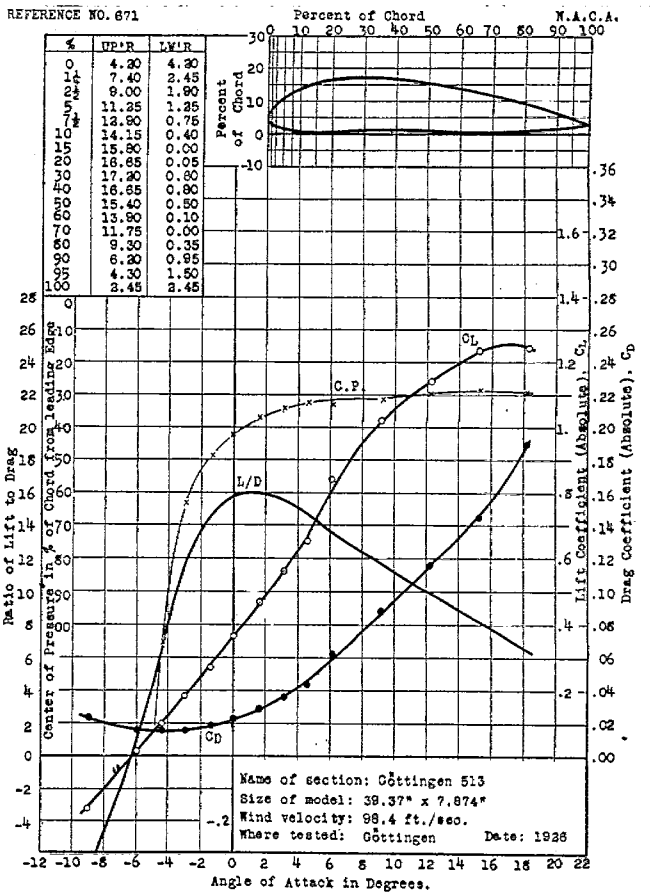
%	UP'R	LW'R
0	3.10	3.10
1¼	4.95	0.50
2½	6.55	0.10
5	8.85	0.15
7½	10.40	0.05
10	11.55	0.00
15	13.30	0.15
20	14.30	0.50
30	14.95	1.35
40	14.55	1.60
50	13.60	1.10
60	12.05	0.45
70	10.10	0.05
80	7.65	0.05
90	4.70	0.35
95	2.90	0.65
100	0.90	0.90



%	UP'R	LW'R
0	3.00	3.00
1¼	6.35	0.75
2½	8.05	0.40
5	10.60	0.15
7½	12.50	0.00
10	13.90	0.00
15	15.85	0.10
20	17.15	0.55
30	17.95	1.45
40	17.40	1.70
50	16.00	1.30
60	14.30	0.30
70	11.90	0.05
80	9.30	0.00
90	5.50	0.35
95	3.35	0.55
100	1.05	1.05

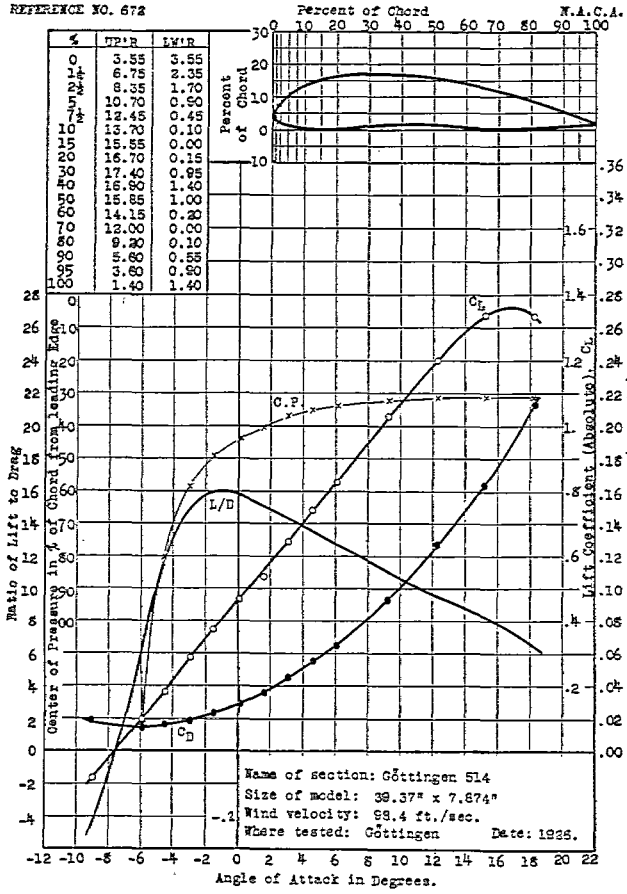


%	UP'R	LW'R
0	3.50	3.50
1¼	5.60	1.45
2½	6.95	1.00
5	9.05	0.55
7½	10.55	0.30
10	11.65	0.10
15	13.20	0.00
20	14.00	0.10
30	14.60	0.95
40	14.15	0.95
50	13.20	0.70
60	11.70	0.30
70	9.90	0.00
80	7.65	0.05
90	4.90	0.45
95	3.30	0.80
100	1.35	1.35



%	UP'R	LW'R
0	4.20	4.20
1¼	7.40	2.45
2½	9.00	1.90
5	11.25	1.25
7½	12.90	0.75
10	14.15	0.40
15	15.80	0.00
20	16.65	0.05
30	17.20	0.80
40	16.65	0.80
50	15.40	0.50
60	13.90	0.10
70	11.75	0.00
80	9.30	0.35
90	6.20	0.95
95	4.30	1.50
100	3.45	3.45

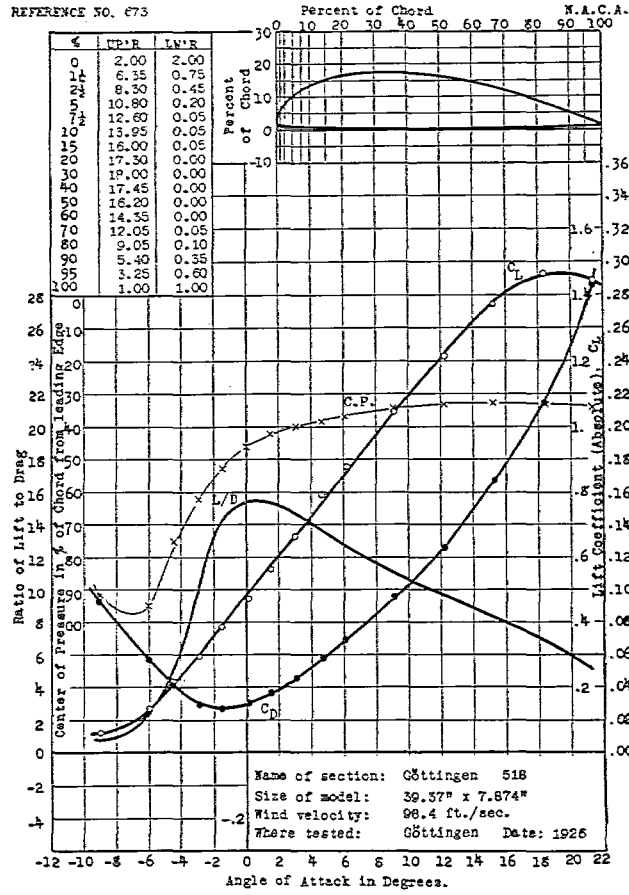
REFERENCE NO. 672



%	UP'R	LW'R
0	3.55	3.55
1¼	6.75	2.35
2½	8.35	1.70
5	10.70	0.90
7½	12.45	0.45
10	13.70	0.10
15	15.55	0.00
20	16.70	0.15
30	17.40	0.95
40	16.90	1.40
50	15.85	1.00
60	14.15	0.20
70	12.00	0.00
80	9.20	0.10
90	5.80	0.55
95	3.60	0.90
100	1.40	1.40

Name of section: Göttingen 514
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926.

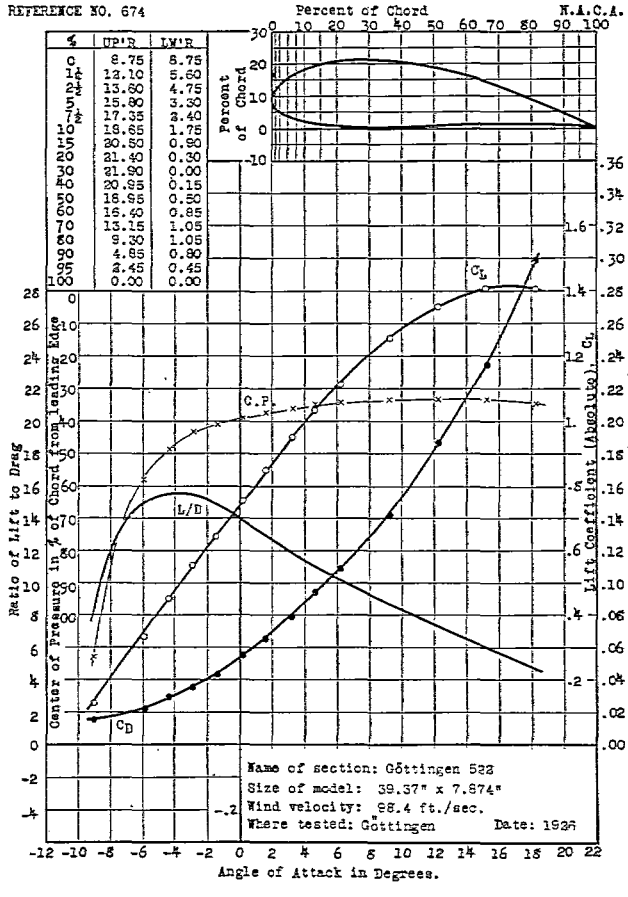
REFERENCE NO. 673



%	UP'R	LW'R
0	2.00	2.00
1¼	6.35	0.75
2½	8.30	0.45
5	10.80	0.20
7½	12.60	0.05
10	13.95	0.05
15	16.00	0.05
20	17.30	0.00
30	18.00	0.00
40	17.45	0.00
50	16.20	0.00
60	14.35	0.00
70	12.05	0.05
80	9.05	0.10
90	5.40	0.35
95	3.25	0.60
100	1.00	1.00

Name of section: Göttingen 518
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926

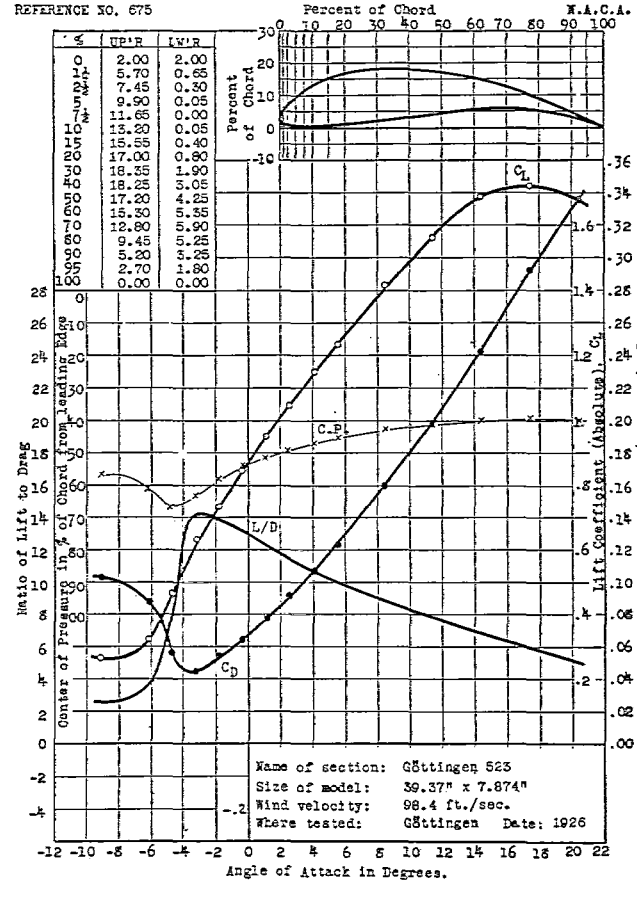
REFERENCE NO. 674



%	UP'R	LW'R
0	8.75	8.75
1¼	12.10	5.60
2½	13.60	4.75
5	15.80	3.30
7½	17.35	3.40
10	18.65	1.75
15	20.50	0.90
20	21.40	0.30
30	21.90	0.00
40	20.85	0.15
50	18.65	0.50
60	16.40	0.85
70	13.15	1.05
80	9.30	1.05
90	4.85	0.80
95	2.45	0.45
100	0.00	0.00

Name of section: Göttingen 522
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926

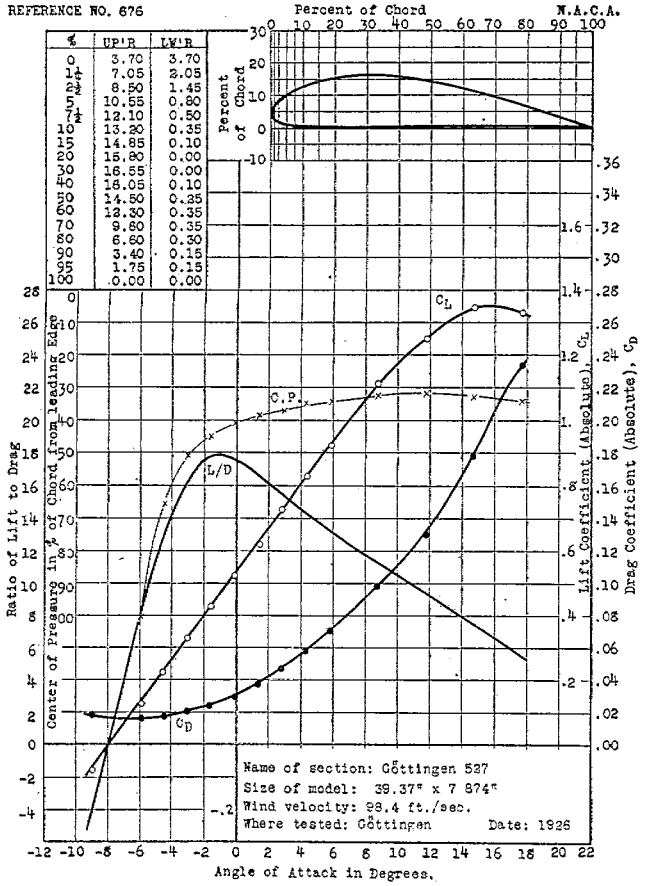
REFERENCE NO. 675



%	UP'R	LW'R
0	2.00	2.00
1¼	5.70	0.65
2½	7.45	0.30
5	9.90	0.05
7½	11.65	0.00
10	13.20	0.05
15	15.55	0.40
20	17.00	0.80
30	18.35	1.90
40	18.25	3.05
50	17.20	4.25
60	15.30	5.35
70	12.80	5.90
80	9.45	5.25
90	5.20	3.25
95	2.70	1.80
100	0.00	0.00

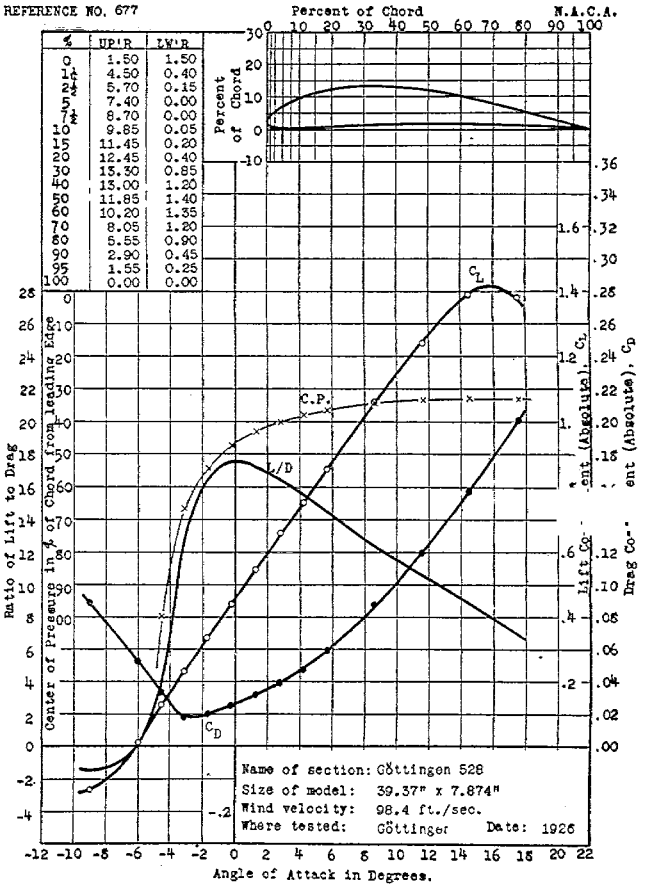
Name of section: Göttingen 523
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926

REFERENCE NO. 676



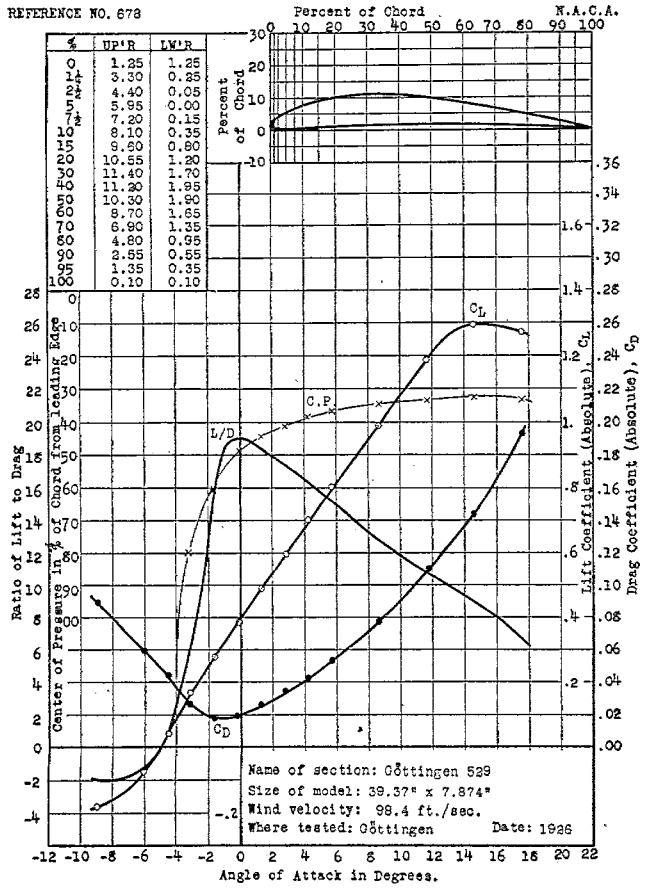
%	UP'R	LW'R
0	3.70	3.70
1¼	7.05	2.05
2½	8.50	1.45
5	10.55	0.80
7½	12.10	0.50
10	13.20	0.35
15	14.85	0.10
20	15.80	0.00
30	16.55	0.00
40	16.05	0.10
50	14.50	0.35
60	12.30	0.35
70	9.80	0.35
80	6.60	0.30
90	3.40	0.15
95	1.75	0.15
100	0.00	0.00

REFERENCE NO. 677



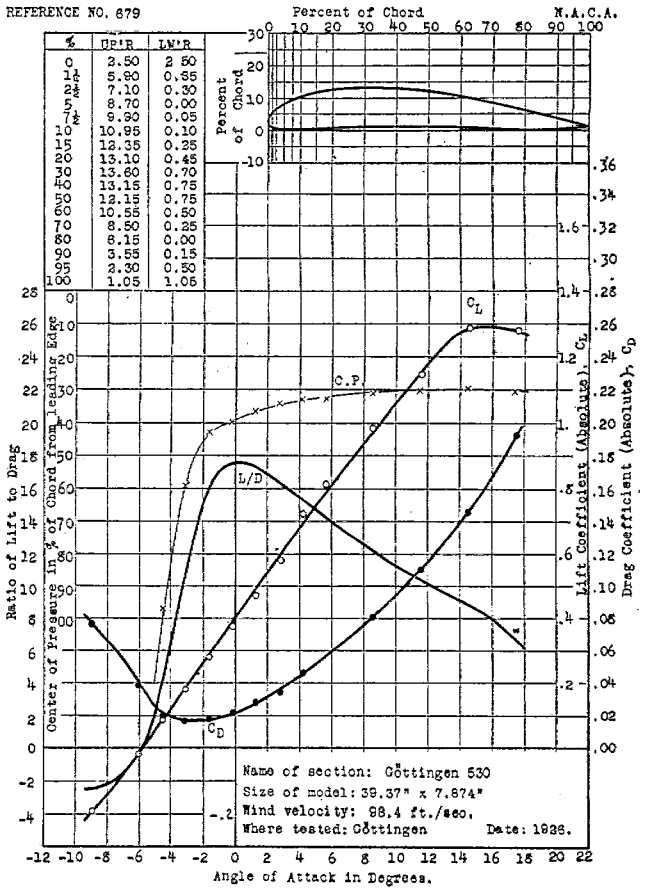
%	UP'R	LW'R
0	1.50	1.50
1¼	4.50	0.40
2½	5.70	0.15
5	7.40	0.00
7½	8.70	0.00
10	9.85	0.05
15	11.45	0.20
20	12.45	0.40
30	13.30	0.85
40	13.00	1.20
50	11.85	1.40
60	10.20	1.35
70	8.05	1.20
80	5.55	0.90
90	2.90	0.45
95	1.55	0.25
100	0.00	0.00

REFERENCE NO. 678



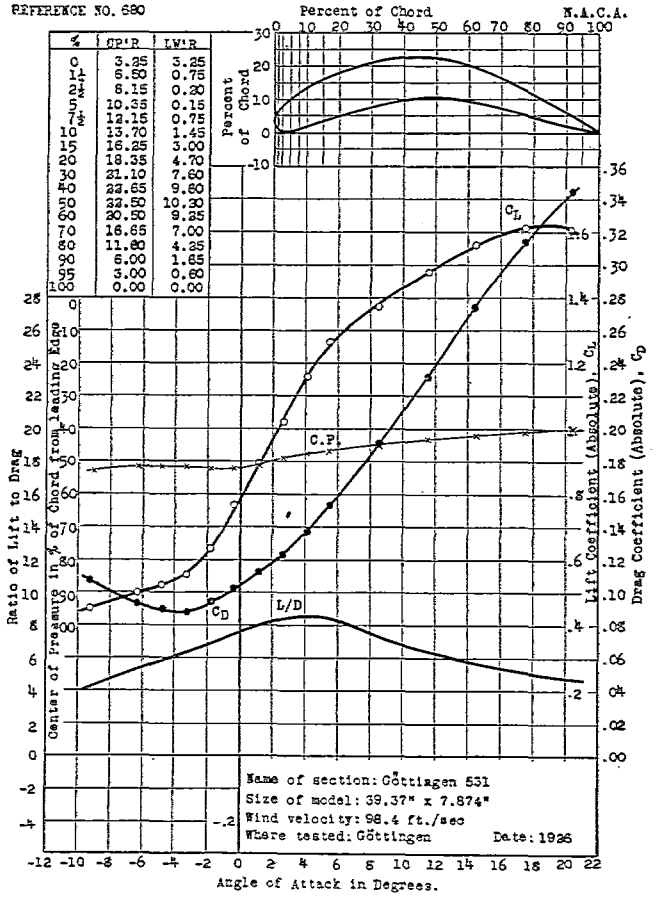
%	UP'R	LW'R
0	1.35	1.35
1¼	3.30	0.85
2½	4.40	0.05
5	5.95	0.00
7½	7.20	0.15
10	8.10	0.35
15	9.60	0.80
20	10.55	1.20
30	11.40	1.70
40	11.20	1.95
50	10.30	1.90
60	8.70	1.65
70	6.90	1.35
80	4.80	0.95
90	2.55	0.55
95	1.35	0.35
100	0.10	0.10

REFERENCE NO. 679



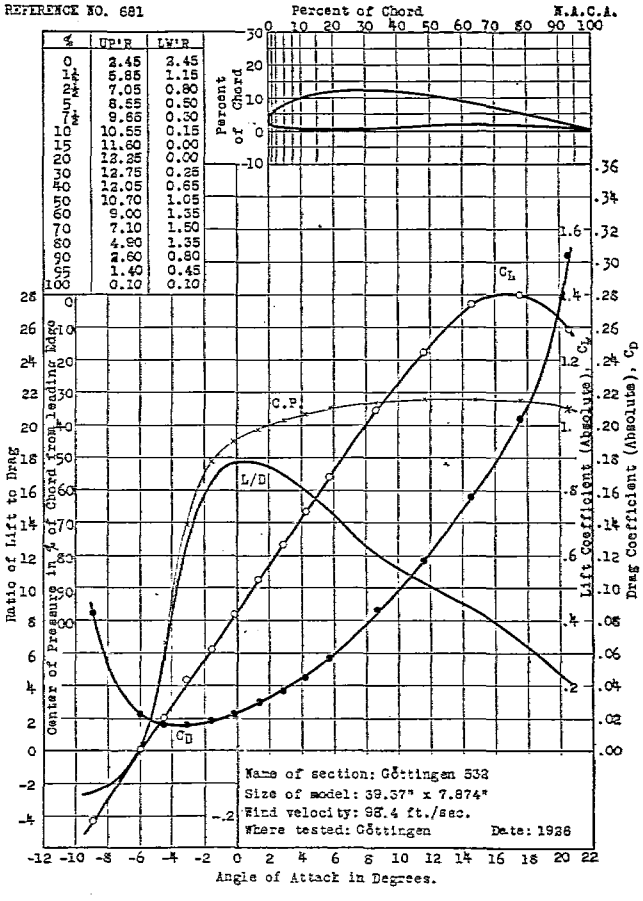
%	UP'R	LW'R
0	3.50	2.50
1¼	5.80	0.65
2½	7.10	0.30
5	8.70	0.00
7½	9.90	0.05
10	10.95	0.10
15	12.35	0.25
20	13.10	0.45
30	13.60	0.70
40	13.15	0.75
50	12.15	0.75
60	10.55	0.50
70	8.50	0.25
80	6.15	0.00
90	3.55	0.15
95	2.30	0.30
100	1.05	1.05

REFERENCE NO. 680



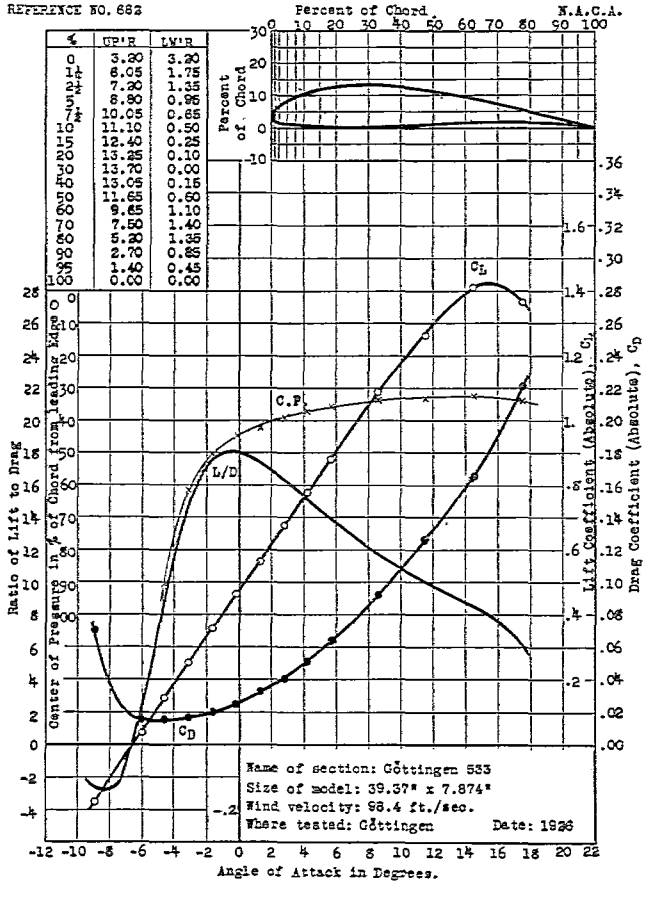
%	UP'R	LW'R
0	3.25	3.25
1¼	6.50	0.75
2½	8.15	0.20
5	10.35	0.15
7½	12.15	0.75
10	13.70	1.45
15	16.25	3.00
20	18.35	4.70
30	21.10	7.60
40	22.65	9.60
50	23.50	10.30
60	20.50	9.25
70	16.65	7.00
80	11.80	4.25
90	6.00	1.65
95	3.00	0.60
100	0.00	0.00

REFERENCE NO. 681



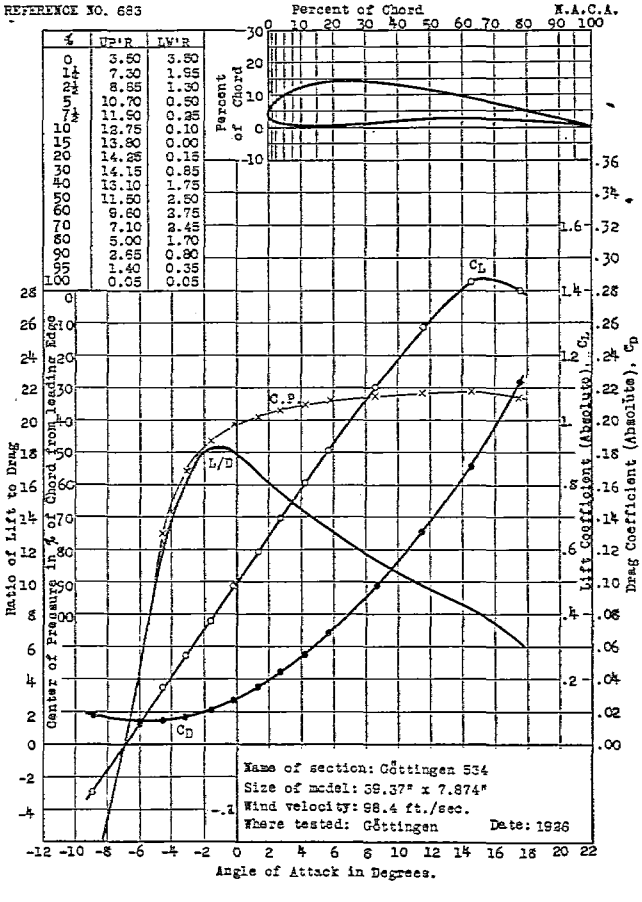
%	UP'R	LW'R
0	2.45	2.45
1¼	5.85	1.15
2½	7.05	0.80
5	8.55	0.50
7½	9.65	0.30
10	10.55	0.15
15	11.80	0.00
20	12.35	0.00
30	12.75	0.25
40	12.05	0.65
50	10.70	1.05
60	9.00	1.35
70	7.10	1.50
80	4.80	1.35
90	2.80	0.80
95	1.40	0.45
100	0.10	0.10

REFERENCE NO. 682

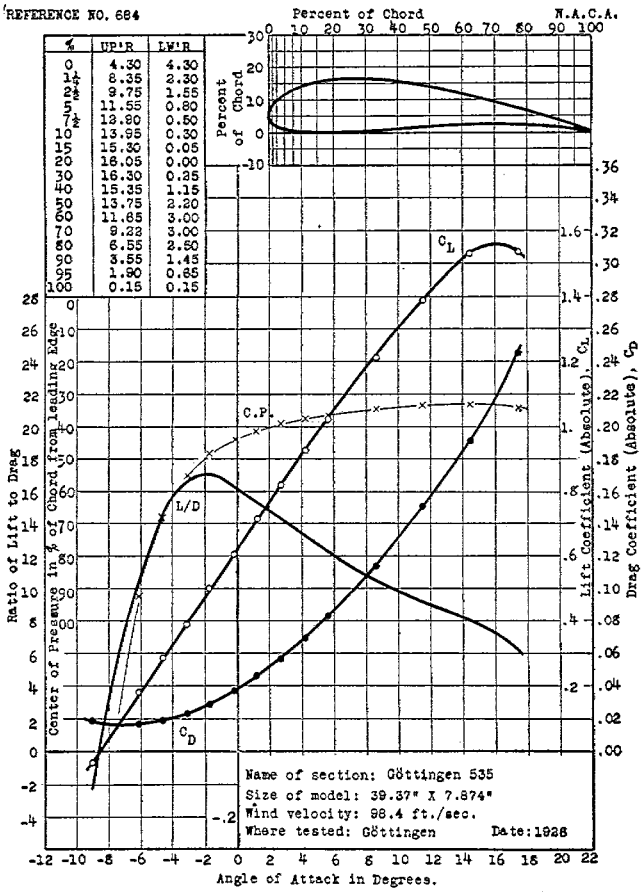


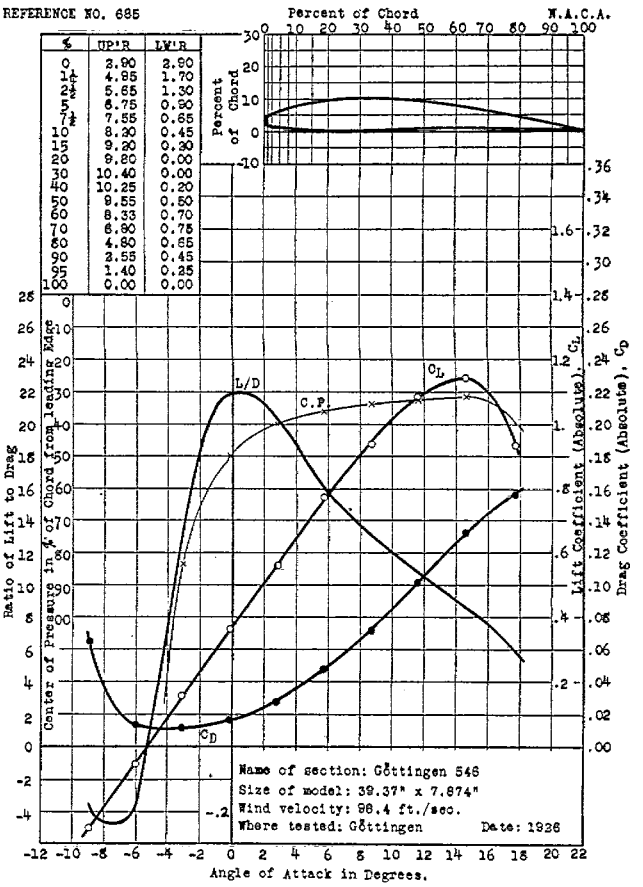
%	UP'R	LW'R
0	3.20	3.20
1¼	6.05	1.75
2½	7.20	1.35
5	8.80	0.95
7½	10.05	0.65
10	11.10	0.50
15	12.40	0.25
20	13.25	0.10
30	13.70	0.00
40	13.05	0.15
50	11.65	0.50
60	9.65	1.10
70	7.50	1.40
80	5.20	1.35
90	2.70	0.85
95	1.40	0.45
100	0.00	0.00

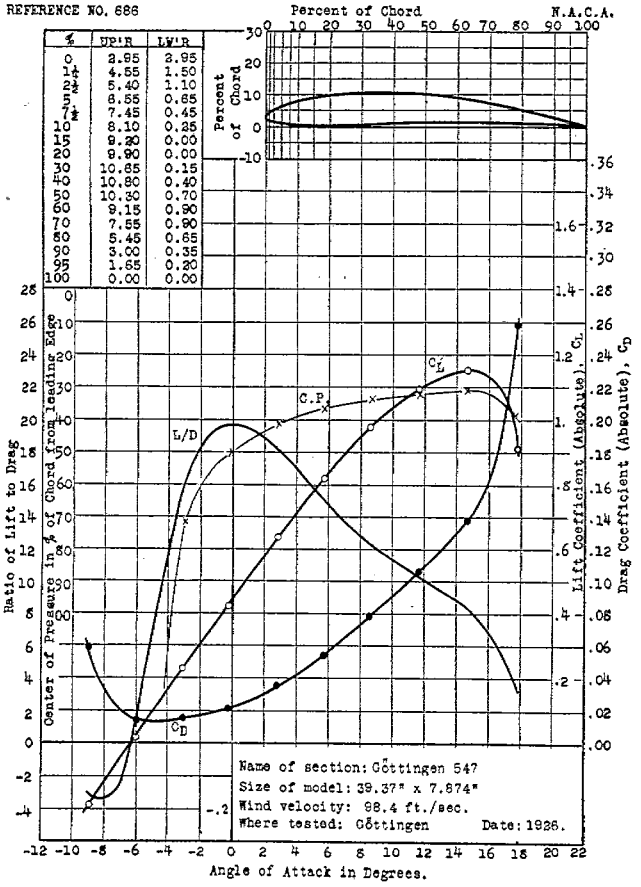
REFERENCE NO. 683

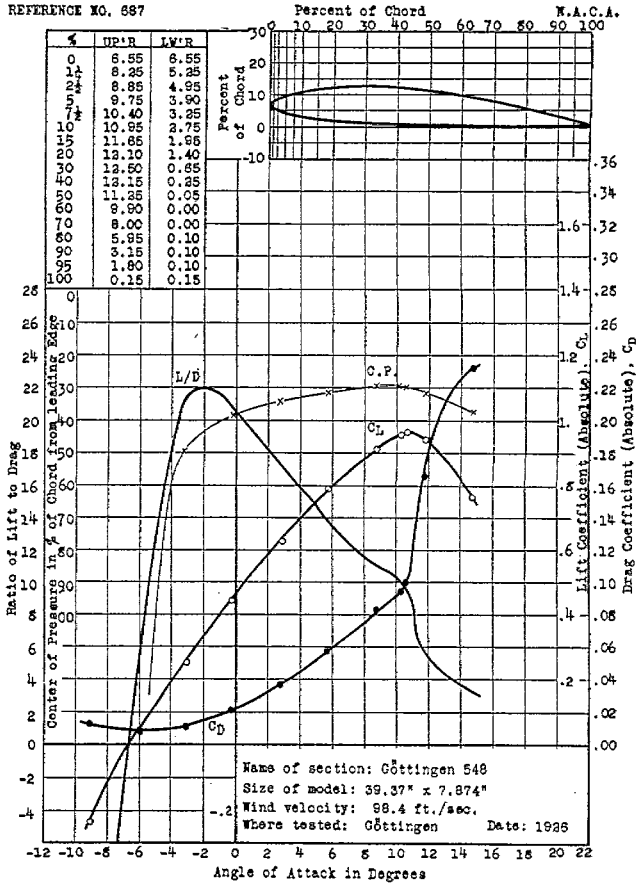


%	UP'R	LW'R
0	3.50	3.50
1¼	7.30	1.95
2½	8.55	1.30
5	10.70	0.80
7½	11.80	0.35
10	12.75	0.10
15	13.80	0.00
20	14.25	0.15
30	14.15	0.85
40	13.10	1.75
50	11.55	2.80
60	9.60	3.75
70	7.10	3.45
80	5.00	1.70
90	2.65	0.80
95	1.40	0.35
100	0.05	0.05

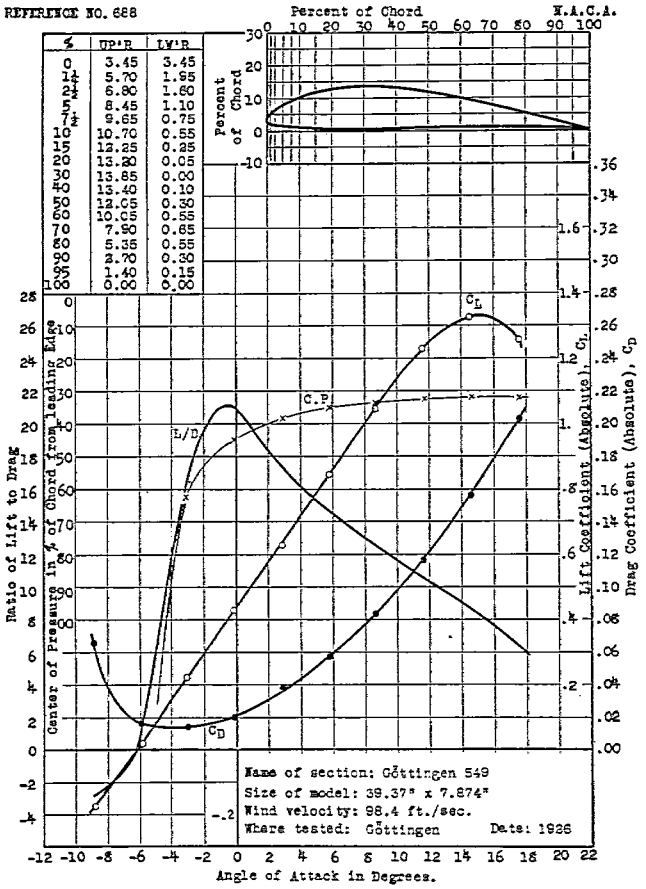

REFERENCE NO. 684
Percent of Chord
N.A.C.A.
% UP'R LW'R
0 4.30 4.30
1¼ 8.35 2.30
2½ 9.75 1.55
5 11.55 0.80
7½ 13.80 0.50
10 13.95 0.30
15 15.30 0.05
20 16.05 0.00
30 16.30 0.25
40 15.35 1.15
50 13.75 2.20
60 11.65 3.00
70 9.23 3.00
80 6.55 2.60
90 3.55 1.45
95 1.90 0.65
100 0.15 0.15
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
L/D
C.P.
C_L
C_D
Lift Coefficient (Absolute), C_L
Drag Coefficient (Absolute), C_D
Name of section: Göttingen 535
Size of model: 39.37" X 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926
Angle of Attack in Degrees.


REFERENCE NO. 685
Percent of Chord
N.A.C.A.
% UP'R LW'R
0 2.90 2.90
1¼ 4.85 1.70
2½ 5.65 1.30
5 6.75 0.80
7½ 7.55 0.65
10 8.20 0.45
15 9.20 0.30
20 9.80 0.00
30 10.40 0.00
40 10.25 0.20
50 9.55 0.50
60 8.33 0.70
70 6.80 0.75
80 4.80 0.65
90 2.55 0.45
95 1.40 0.25
100 0.00 0.00
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
L/D
C.P.
C_L
C_D
Lift Coefficient (Absolute), C_L
Drag Coefficient (Absolute), C_D
Name of section: Göttingen 546
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926
Angle of Attack in Degrees.


REFERENCE NO. 686
Percent of Chord
N.A.C.A.
% UP'R LW'R
0 3.95 3.95
1¼ 4.55 1.50
2½ 5.40 1.10
5 6.55 0.65
7½ 7.45 0.45
10 8.10 0.25
15 9.20 0.00
20 9.90 0.00
30 10.65 0.15
40 10.80 0.40
50 10.30 0.70
60 9.15 0.90
70 7.55 0.90
80 5.45 0.65
90 3.00 0.35
95 1.65 0.20
100 0.00 0.00
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
L/D
C.P.
C_L
C_D
Lift Coefficient (Absolute), C_L
Drag Coefficient (Absolute), C_D
Name of section: Göttingen 547
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926.
Angle of Attack in Degrees.

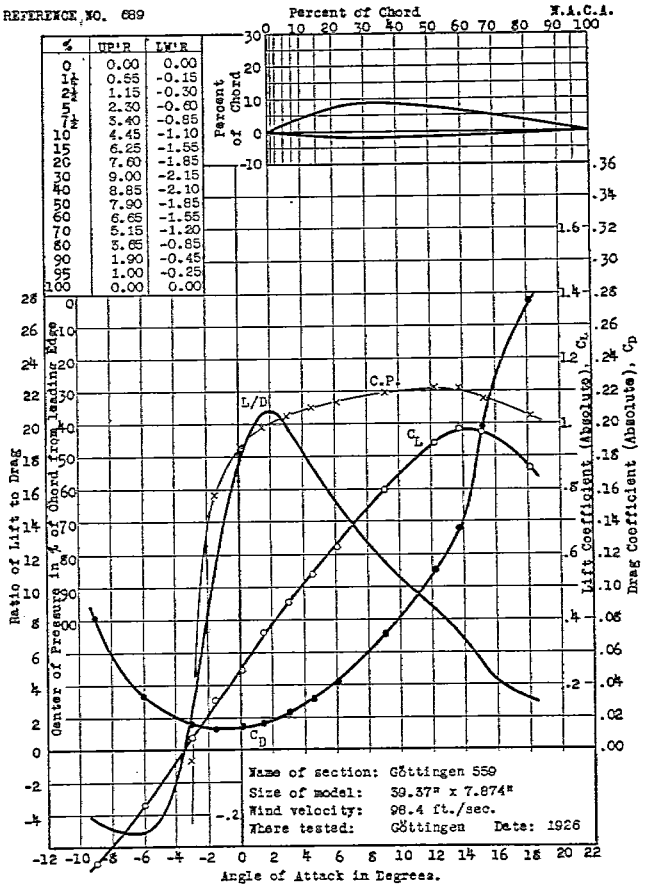

REFERENCE NO. 687
Percent of Chord
N.A.C.A.
% UP'R LW'R
0 6.55 6.55
1¼ 8.25 5.25
2½ 8.85 4.95
5 9.75 3.90
7½ 10.40 3.25
10 10.95 2.75
15 11.85 1.95
20 12.10 1.40
30 12.50 0.85
40 12.15 0.25
50 11.25 0.05
60 9.90 0.00
70 8.00 0.00
80 5.95 0.10
90 3.15 0.10
95 1.80 0.10
100 0.15 0.15
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
L/D
C.P.
C_L
C_D
Lift Coefficient (Absolute), C_L
Drag Coefficient (Absolute), C_D
Name of section: Göttingen 548
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1926
Angle of Attack in Degrees

REFERENCE NO. 688



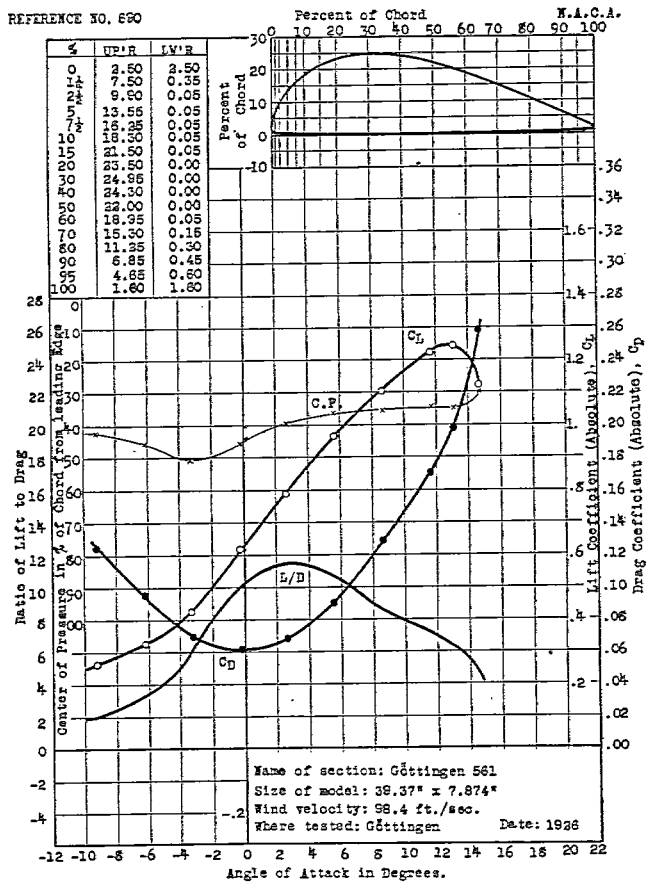
%	UP'R	LW'R
0	3.45	3.45
1¼	5.70	1.95
2½	6.80	1.60
5	8.45	1.10
7½	9.65	0.75
10	10.70	0.55
15	12.25	0.25
20	13.20	0.05
30	13.85	0.00
40	13.40	0.10
50	12.05	0.30
60	10.05	0.55
70	7.90	0.65
80	5.35	0.55
90	3.70	0.30
95	1.40	0.15
100	0.00	0.00

REFERENCE NO. 689



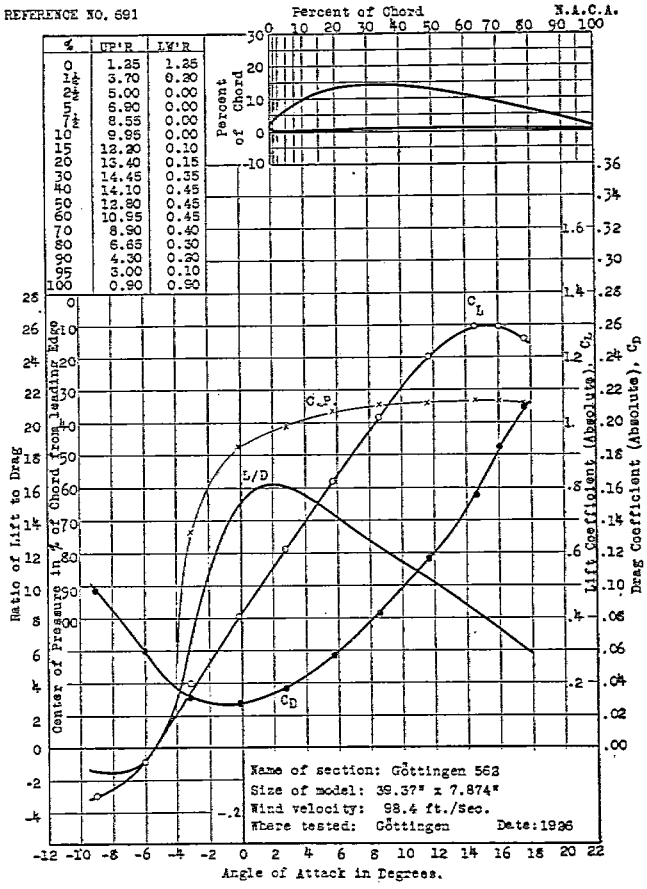
%	UP'R	LW'R
0	0.00	0.00
1¼	0.55	-0.15
2½	1.15	-0.30
5	2.30	-0.60
7½	3.40	-0.85
10	4.45	-1.10
15	6.25	-1.55
20	7.60	-1.85
30	9.00	-2.15
40	8.85	-2.10
50	7.90	-1.85
60	6.65	-1.55
70	5.15	-1.20
80	3.65	-0.85
90	1.90	-0.45
95	1.00	-0.25
100	0.00	0.00

REFERENCE NO. 690



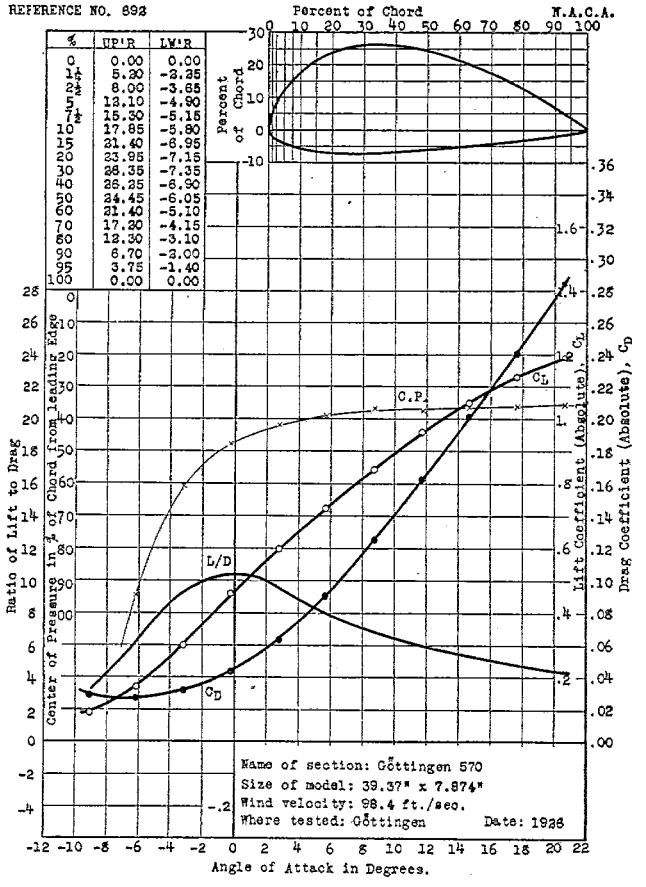
%	UP'R	LW'R
0	2.50	2.50
1¼	7.50	0.35
2½	9.90	0.05
5	13.55	0.05
7½	16.35	0.05
10	18.50	0.05
15	21.50	0.05
20	23.50	0.00
30	24.95	0.00
40	24.30	0.00
50	22.00	0.00
60	18.95	0.05
70	15.30	0.15
80	11.35	0.30
90	6.85	0.45
95	4.65	0.60
100	1.60	1.60

REFERENCE NO. 691



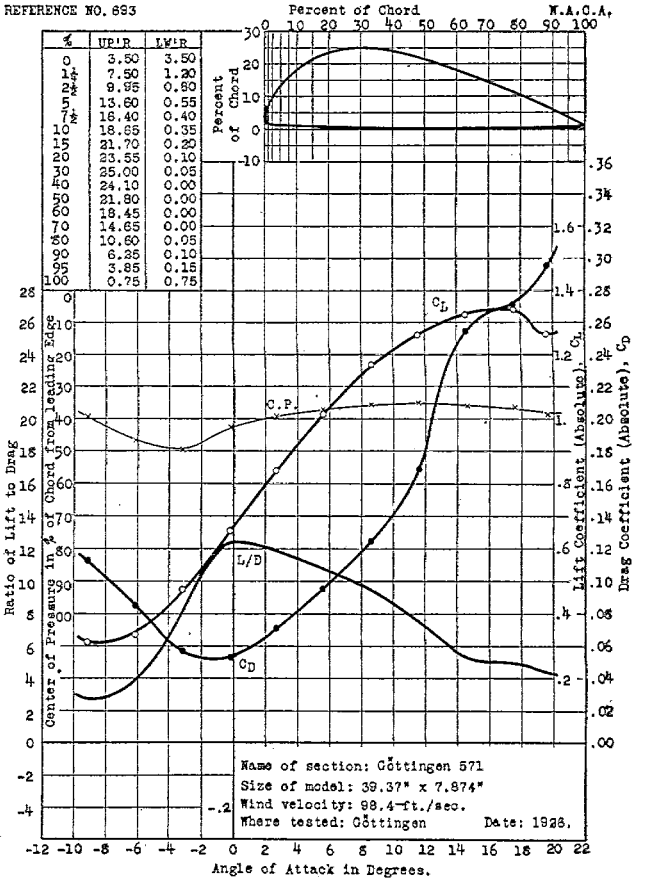
%	UP'R	LW'R
0	1.25	1.25
1¼	3.70	0.80
2½	5.00	0.00
5	6.80	0.00
7½	8.55	0.00
10	9.95	0.00
15	12.20	0.10
20	13.40	0.15
30	14.45	0.35
40	14.10	0.45
50	12.80	0.45
60	10.95	0.45
70	8.90	0.40
80	6.65	0.30
90	4.30	0.20
95	3.00	0.10
100	0.90	0.90

REFERENCE NO. 693



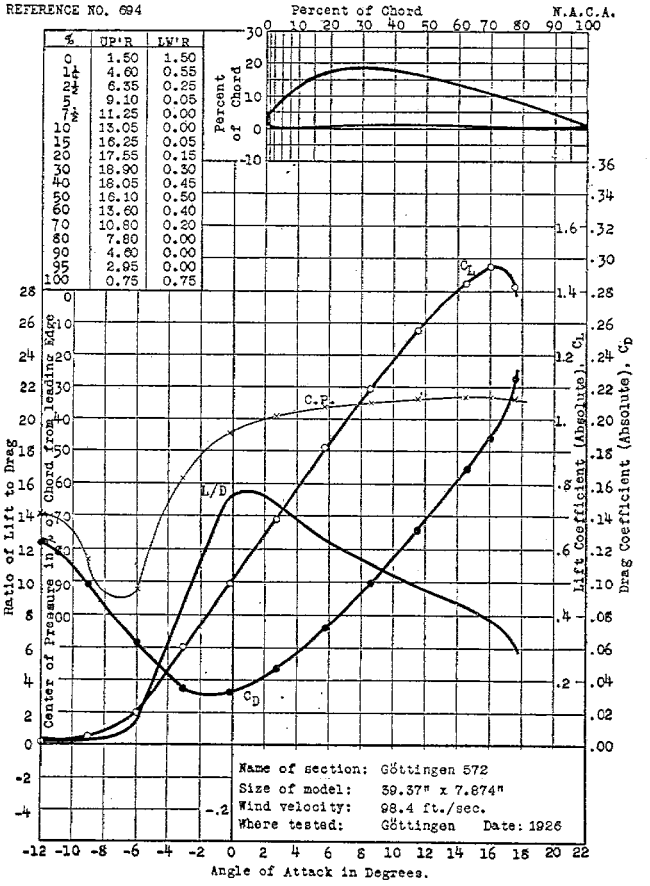
%	UP'R	LW'R
0	0.00	0.00
1¼	5.20	-2.35
2½	8.00	-3.65
5	13.10	-4.90
7½	15.30	-5.15
10	17.85	-5.80
15	21.40	-6.95
20	23.95	-7.15
30	26.35	-7.35
40	26.25	-6.90
50	24.45	-6.05
60	21.40	-5.10
70	17.30	-4.15
80	12.30	-3.10
90	6.70	-2.00
95	3.75	-1.40
100	0.00	0.00

REFERENCE NO. 693



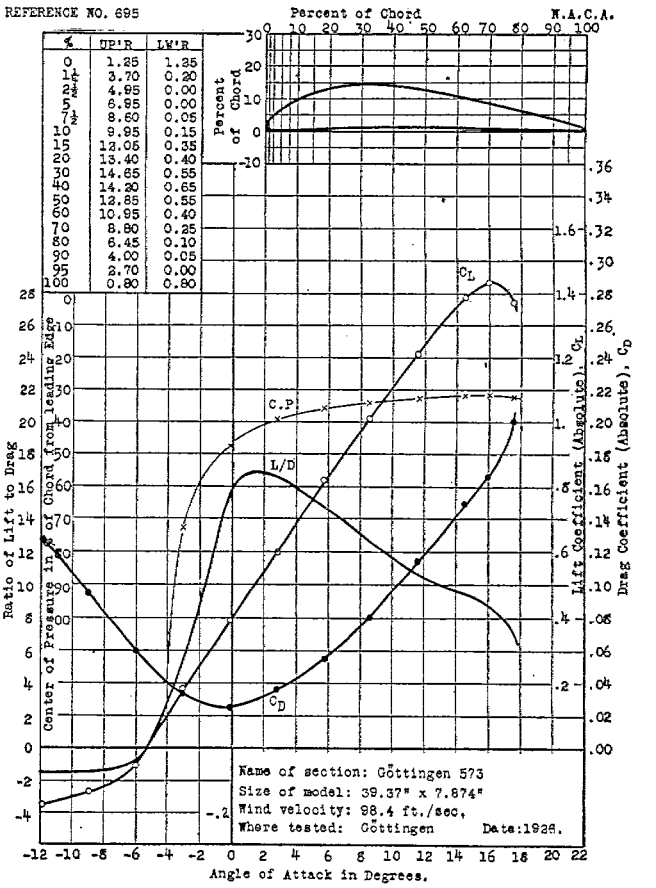
%	UP'R	LW'R
0	3.50	3.50
1¼	7.50	1.20
2½	9.95	0.80
5	13.60	0.55
7½	16.40	0.40
10	18.65	0.35
15	21.70	0.20
20	23.55	0.10
30	25.00	0.05
40	24.10	0.00
50	21.80	0.00
60	18.45	0.00
70	14.65	0.00
80	10.60	0.05
90	6.25	0.10
95	3.85	0.15
100	0.75	0.75

REFERENCE NO. 694



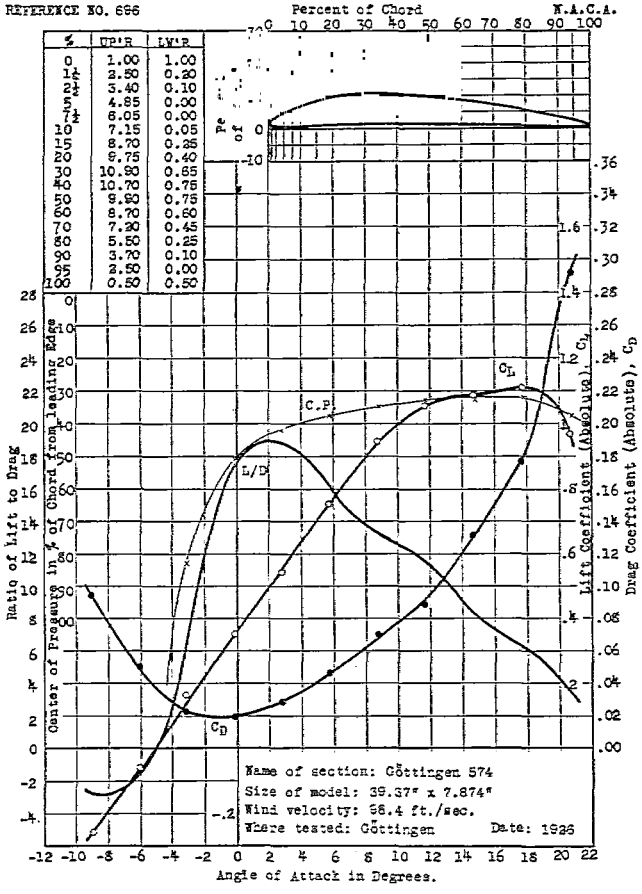
%	UP'R	LW'R
0	1.50	1.50
1¼	4.60	0.55
2½	6.35	0.25
5	9.10	0.05
7½	11.25	0.00
10	13.05	0.00
15	16.25	0.05
20	17.55	0.15
30	18.90	0.30
40	18.05	0.45
50	16.10	0.50
60	13.60	0.40
70	10.80	0.20
80	7.80	0.00
90	4.60	0.00
95	2.95	0.00
100	0.75	0.75

REFERENCE NO. 695



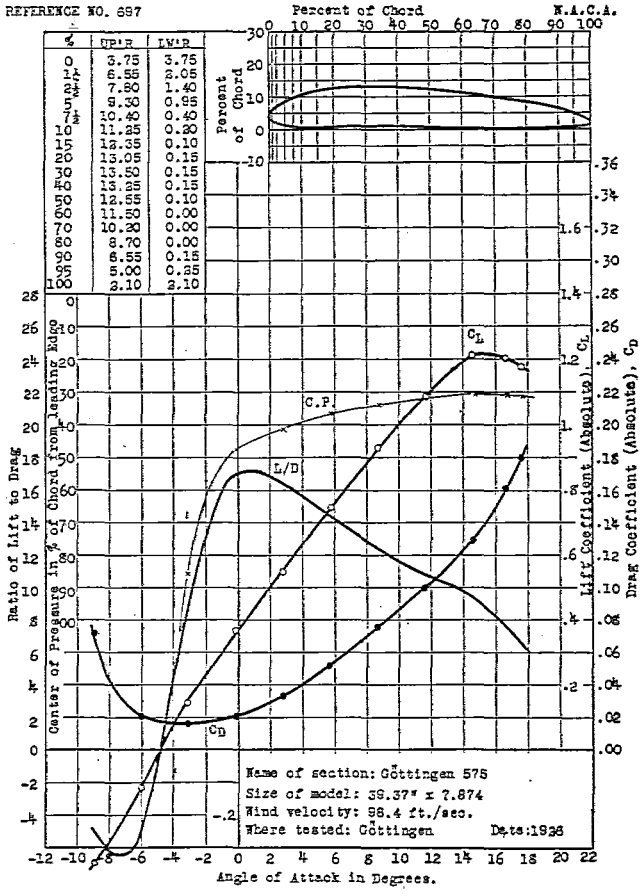
%	UP'R	LW'R
0	1.25	1.25
1¼	3.70	0.20
2½	4.95	0.00
5	6.95	0.00
7½	8.60	0.05
10	9.95	0.15
15	12.05	0.35
20	13.40	0.40
30	14.65	0.55
40	14.20	0.65
50	12.85	0.55
60	10.95	0.40
70	8.80	0.25
80	6.45	0.10
90	4.00	0.05
95	2.70	0.00
100	0.80	0.80

REFERENCE NO. 686



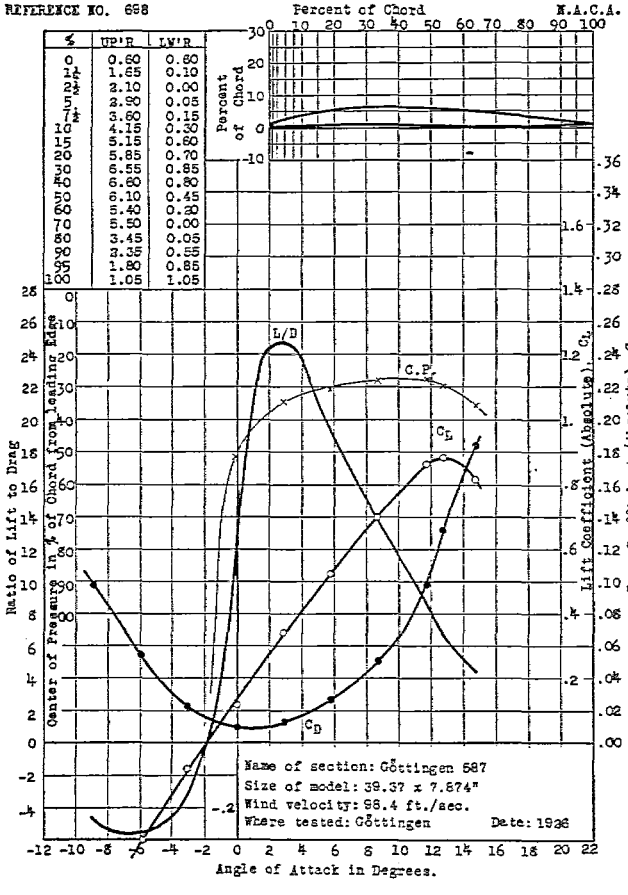
%	UP'R	LW'R
0	1.00	1.00
1¼	2.50	0.20
2½	3.40	0.10
5	4.85	0.00
7½	6.05	0.00
10	7.15	0.05
15	8.70	0.25
20	9.75	0.40
30	10.90	0.65
40	10.70	0.75
50	9.90	0.75
60	8.70	0.60
70	7.20	0.45
80	5.50	0.25
90	3.70	0.10
95	2.50	0.00
100	0.50	0.50

REFERENCE NO. 687



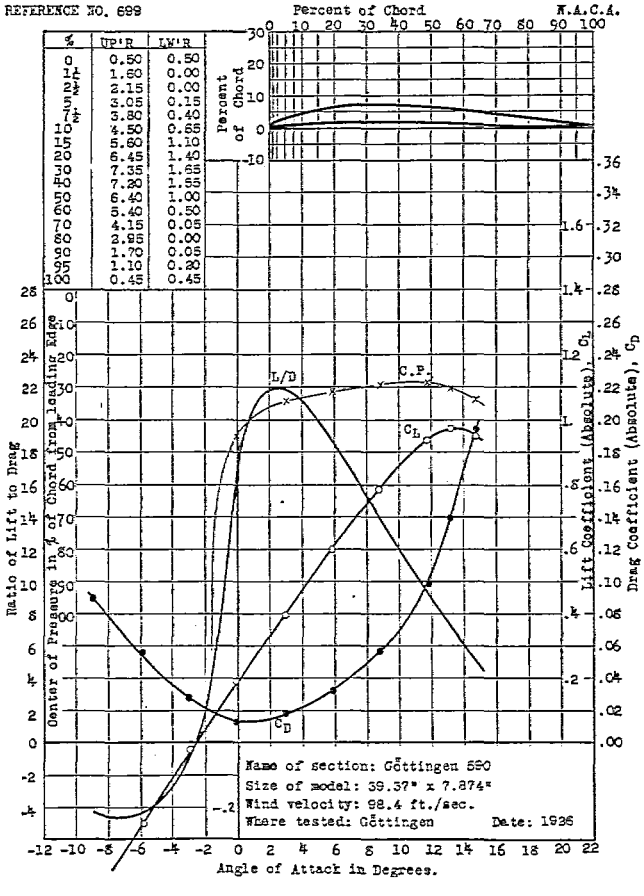
%	UP'R	LW'R
0	3.75	3.75
1¼	6.55	2.05
2½	7.80	1.40
5	9.30	0.95
7½	10.40	0.40
10	11.25	0.20
15	12.35	0.10
20	13.05	0.15
30	13.50	0.15
40	13.25	0.15
50	12.55	0.10
60	11.50	0.00
70	10.20	0.00
80	8.70	0.00
90	6.55	0.15
95	5.00	0.85
100	2.10	2.10

REFERENCE NO. 688



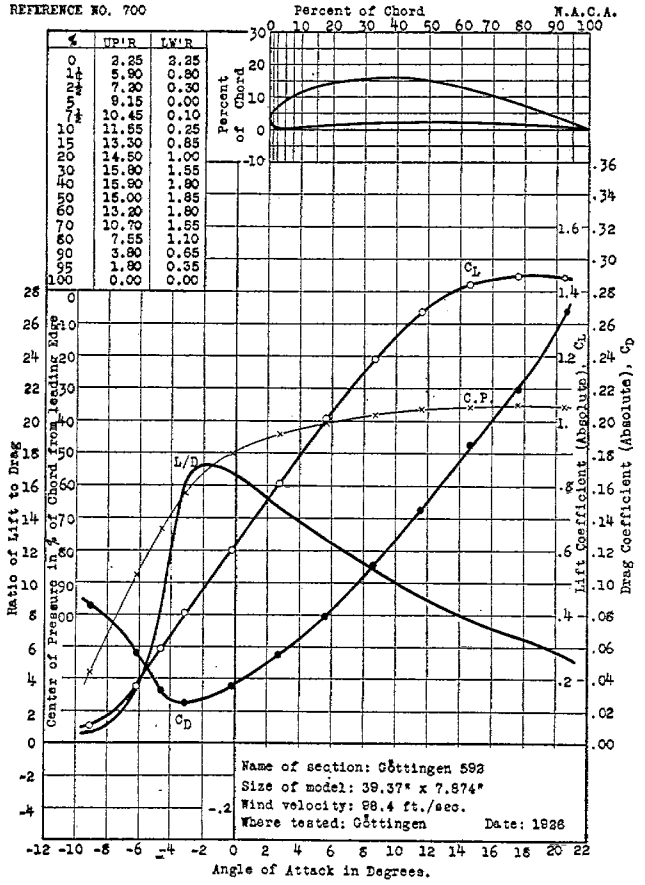
%	UP'R	LW'R
0	0.60	0.60
1¼	1.65	0.10
2½	2.10	0.00
5	2.90	0.05
7½	3.60	0.15
10	4.15	0.30
15	5.15	0.60
20	5.85	0.70
30	6.55	0.85
40	6.60	0.80
50	6.10	0.45
60	5.40	0.20
70	5.50	0.00
80	3.45	0.05
90	2.35	0.55
95	1.80	0.85
100	1.05	1.05

REFERENCE NO. 689



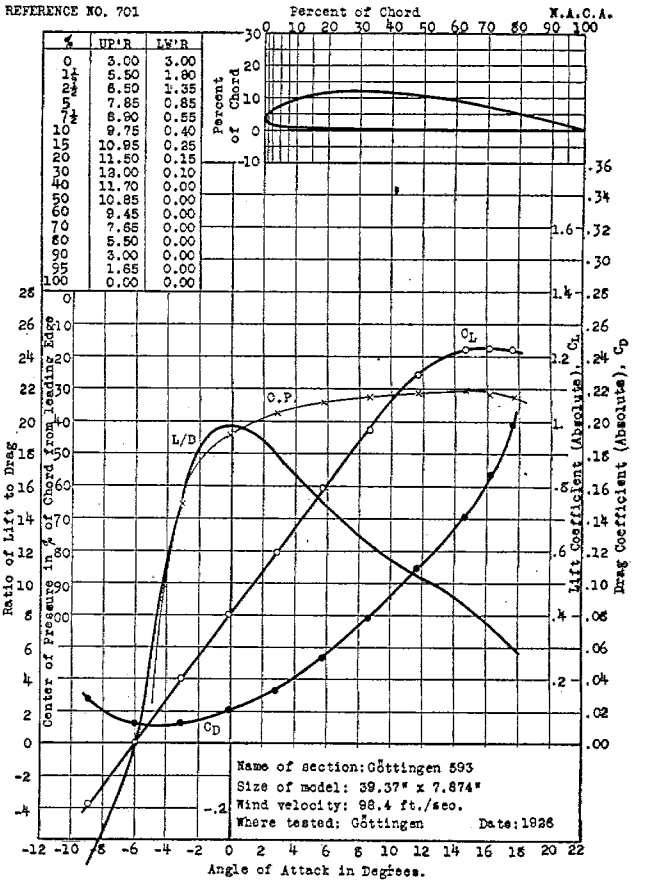
%	UP'R	LW'R
0	0.50	0.50
1¼	1.60	0.00
2½	2.15	0.00
5	3.05	0.15
7½	3.80	0.40
10	4.50	0.65
15	5.60	1.10
20	6.45	1.40
30	7.35	1.65
40	7.20	1.55
50	6.40	1.00
60	5.40	0.50
70	4.15	0.05
80	2.95	0.00
90	1.70	0.05
95	1.10	0.20
100	0.45	0.45

REFERENCE NO. 700



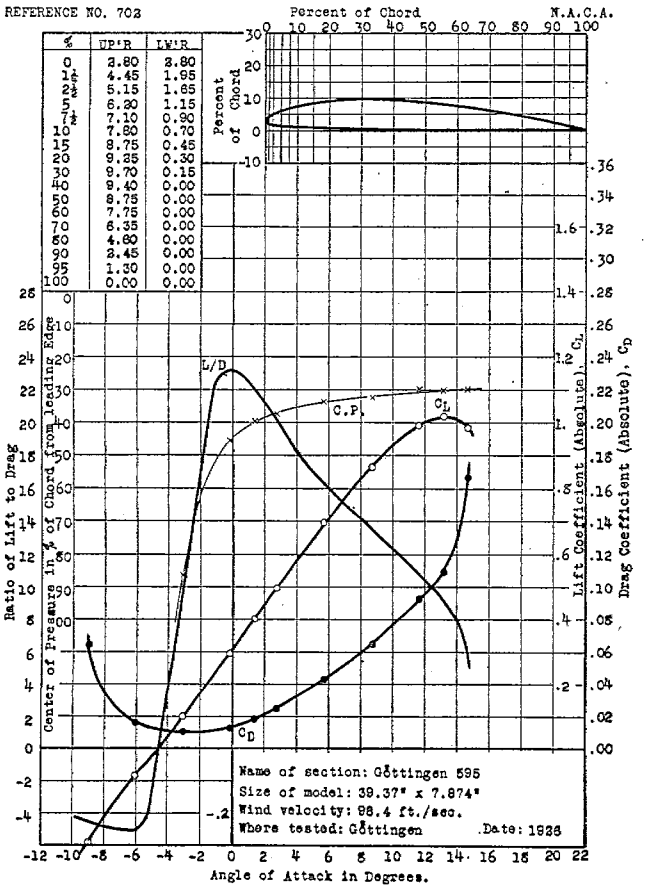
%	UP'R	LW'R
0	3.25	3.25
1¼	5.80	0.80
2½	7.20	0.30
5	9.15	0.00
7½	10.45	0.10
10	11.55	0.25
15	13.30	0.85
20	14.50	1.00
30	15.80	1.55
40	15.90	1.80
50	15.00	1.85
60	13.20	1.80
70	10.70	1.55
80	7.55	1.10
90	3.80	0.65
95	1.80	0.35
100	0.00	0.00

REFERENCE NO. 701



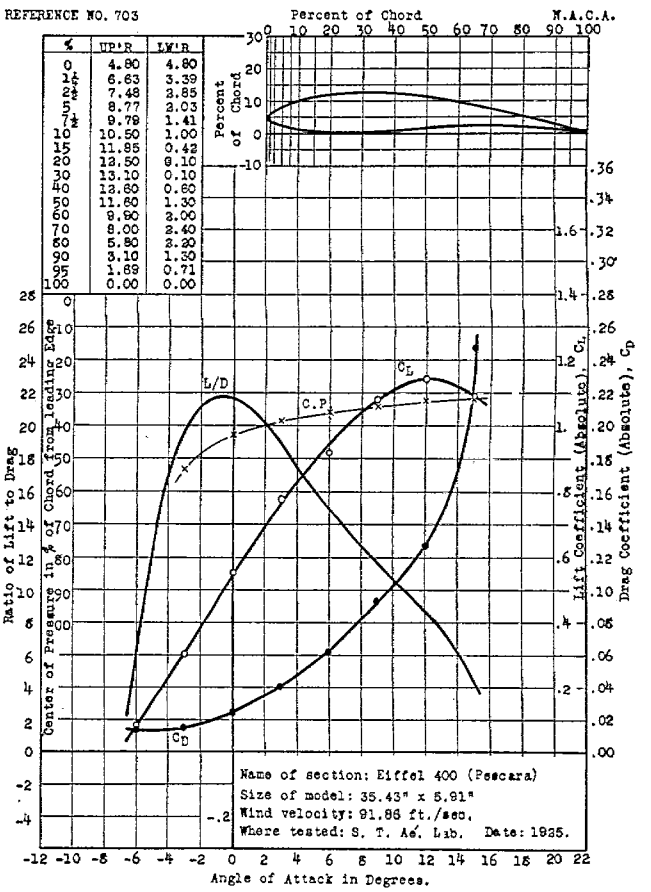
%	UP'R	LW'R
0	3.00	3.00
1¼	5.50	1.80
2½	6.50	1.35
5	7.85	0.85
7½	8.80	0.55
10	9.75	0.40
15	10.95	0.25
20	11.50	0.15
30	12.00	0.10
40	11.70	0.00
50	10.85	0.00
60	9.45	0.00
70	7.65	0.00
80	5.50	0.00
90	3.00	0.00
95	1.65	0.00
100	0.00	0.00

REFERENCE NO. 702



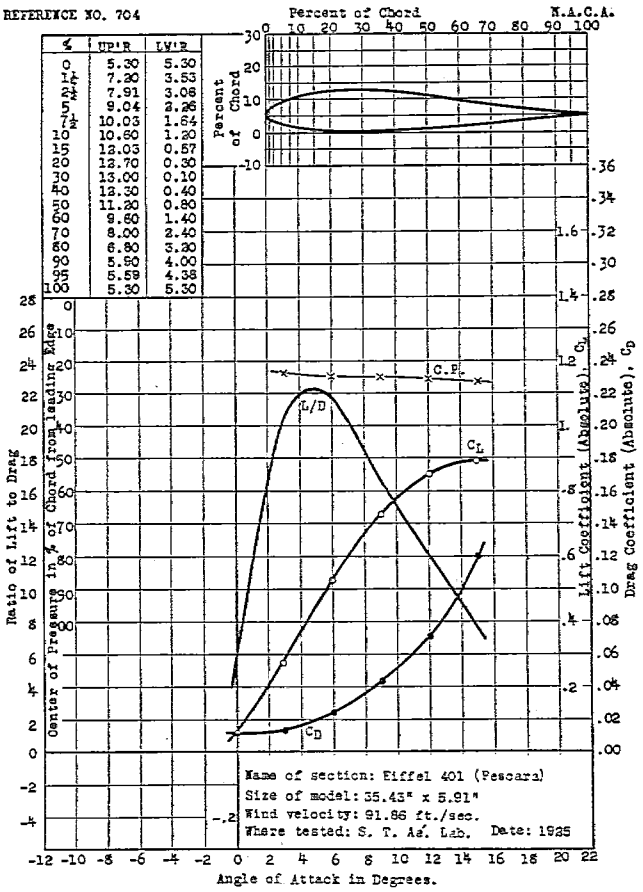
%	UP'R	LW'R
0	3.80	3.80
1¼	4.45	1.95
2½	5.15	1.65
5	6.20	1.15
7½	7.10	0.90
10	7.80	0.70
15	8.75	0.45
20	9.25	0.30
30	9.70	0.15
40	9.40	0.00
50	8.75	0.00
60	7.75	0.00
70	6.35	0.00
80	4.60	0.00
90	2.45	0.00
95	1.30	0.00
100	0.00	0.00

REFERENCE NO. 703



%	UP'R	LW'R
0	4.80	4.80
1¼	6.63	3.39
2½	7.48	2.85
5	8.77	2.03
7½	9.79	1.41
10	10.50	1.00
15	11.85	0.42
20	12.50	0.10
30	13.10	0.10
40	13.60	0.60
50	11.60	1.30
60	8.90	2.00
70	8.00	2.40
80	5.80	2.20
90	3.10	1.30
95	1.69	0.71
100	0.00	0.00

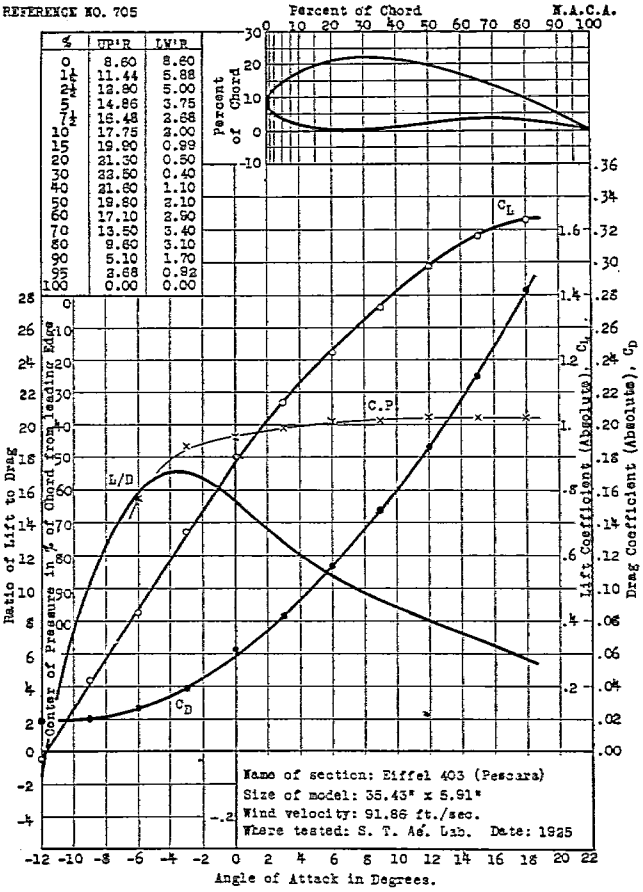
REFERENCE NO. 704



%	UP'R	LW'R
0	5.30	5.30
1¼	7.20	3.53
2½	7.91	3.08
5	9.04	2.26
7½	10.03	1.64
10	10.60	1.20
15	12.03	0.57
20	12.70	0.30
30	13.00	0.10
40	12.30	0.40
50	11.20	0.80
60	9.60	1.40
70	8.00	2.40
80	6.80	3.20
90	5.90	4.00
95	5.59	4.38
100	5.30	5.30

Name of section: Eiffel 401 (Pescara)
Size of model: 35.43" x 5.91"
Wind velocity: 91.86 ft./sec.
Where tested: S. T. Aé. Lab. Date: 1925

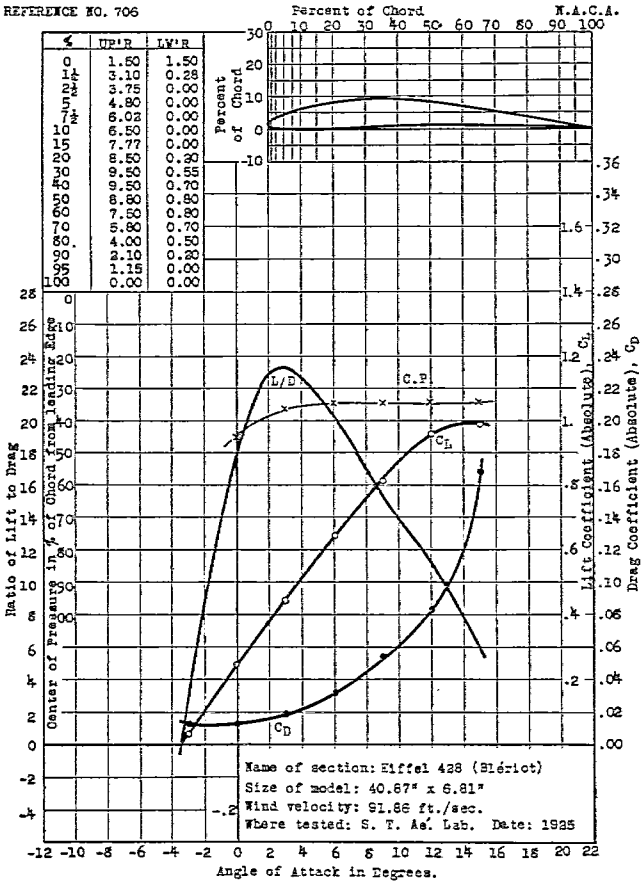
REFERENCE NO. 705



%	UP'R	LW'R
0	8.60	8.60
1¼	11.44	5.88
2½	12.80	5.00
5	14.86	3.75
7½	16.48	2.68
10	17.75	2.00
15	19.90	0.99
20	21.30	0.50
30	22.50	0.40
40	21.80	1.10
50	19.80	2.10
60	17.10	2.80
70	13.50	3.40
80	9.60	3.10
90	5.10	1.70
95	2.68	0.82
100	0.00	0.00

Name of section: Eiffel 403 (Pescara)
Size of model: 35.43" x 5.91"
Wind velocity: 91.86 ft./sec.
Where tested: S. T. Aé. Lab. Date: 1925

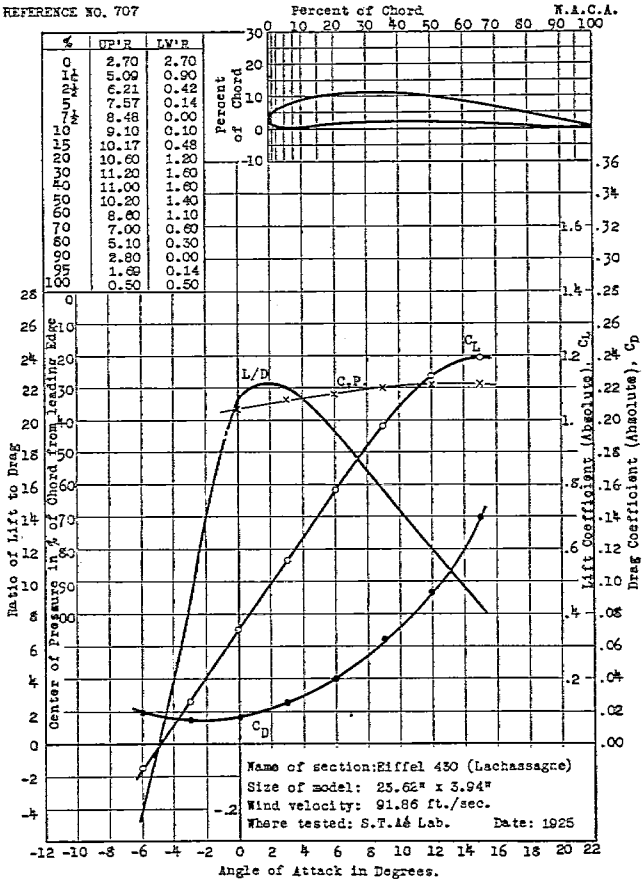
REFERENCE NO. 706



%	UP'R	LW'R
0	1.50	1.50
1¼	3.10	0.28
2½	3.75	0.00
5	4.80	0.00
7½	6.02	0.00
10	6.50	0.00
15	7.77	0.00
20	8.50	0.30
30	9.50	0.55
40	9.50	0.70
50	8.80	0.80
60	7.50	0.80
70	5.80	0.70
80	4.00	0.50
90	2.10	0.20
95	1.15	0.00
100	0.00	0.00

Name of section: Eiffel 428 (Blériot)
Size of model: 40.87" x 6.81"
Wind velocity: 91.86 ft./sec.
Where tested: S. T. Aé. Lab. Date: 1925

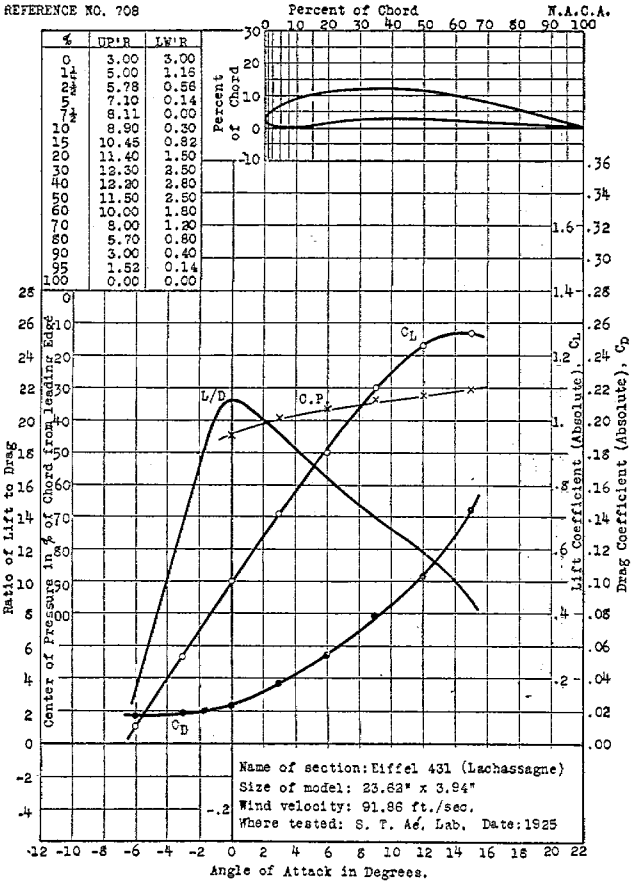
REFERENCE NO. 707



%	UP'R	LW'R
0	2.70	2.70
1¼	5.09	0.90
2½	6.21	0.42
5	7.57	0.14
7½	8.48	0.00
10	9.10	0.10
15	10.17	0.48
20	10.60	1.20
30	11.20	1.60
40	11.00	1.60
50	10.20	1.40
60	8.60	1.10
70	7.00	0.60
80	5.10	0.30
90	2.80	0.00
95	1.68	0.14
100	0.50	0.50

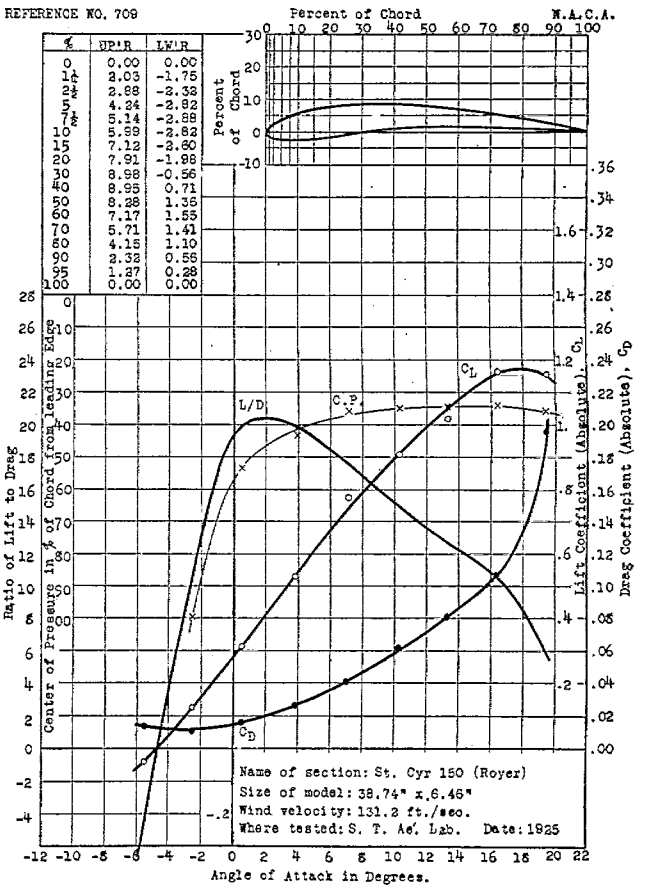
Name of section: Eiffel 430 (Lachassagne)
Size of model: 25.62" x 3.94"
Wind velocity: 91.86 ft./sec.
Where tested: S.T.Aé Lab. Date: 1925

REFERENCE NO. 708



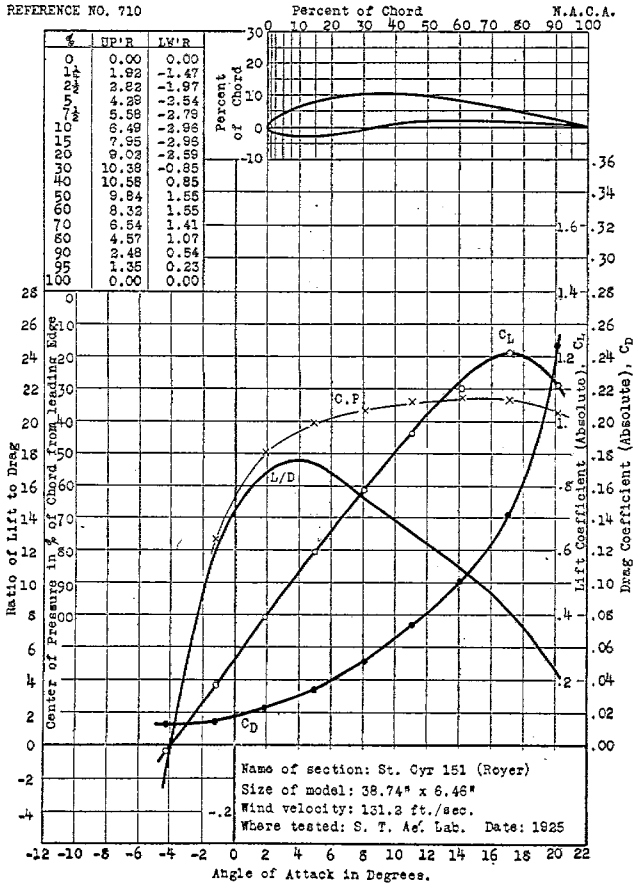
%	UP'R	LW'R
0	3.00	3.00
1¼	5.00	1.16
2½	5.78	0.56
5	7.10	0.14
7½	8.11	0.03
10	8.90	0.30
15	10.45	0.82
20	11.40	1.50
30	12.30	2.50
40	12.80	2.80
50	11.50	2.50
60	10.00	1.80
70	8.00	1.20
80	5.70	0.80
90	3.00	0.40
95	1.52	0.14
100	0.00	0.00

REFERENCE NO. 709



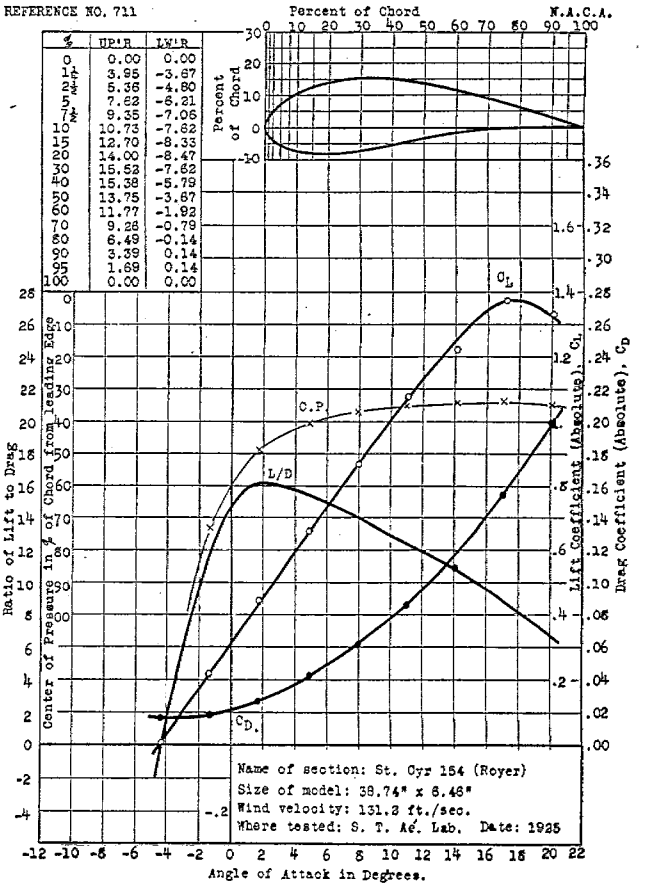
%	UP'R	LW'R
0	0.00	0.00
1¼	2.03	-1.75
2½	2.88	-2.33
5	4.24	-2.82
7½	5.14	-2.88
10	5.89	-2.82
15	7.12	-2.60
20	7.91	-1.98
30	8.98	-0.56
40	8.95	0.71
50	8.28	1.36
60	7.17	1.55
70	5.71	1.41
80	4.15	1.10
90	2.33	0.56
95	1.27	0.28
100	0.00	0.00

REFERENCE NO. 710



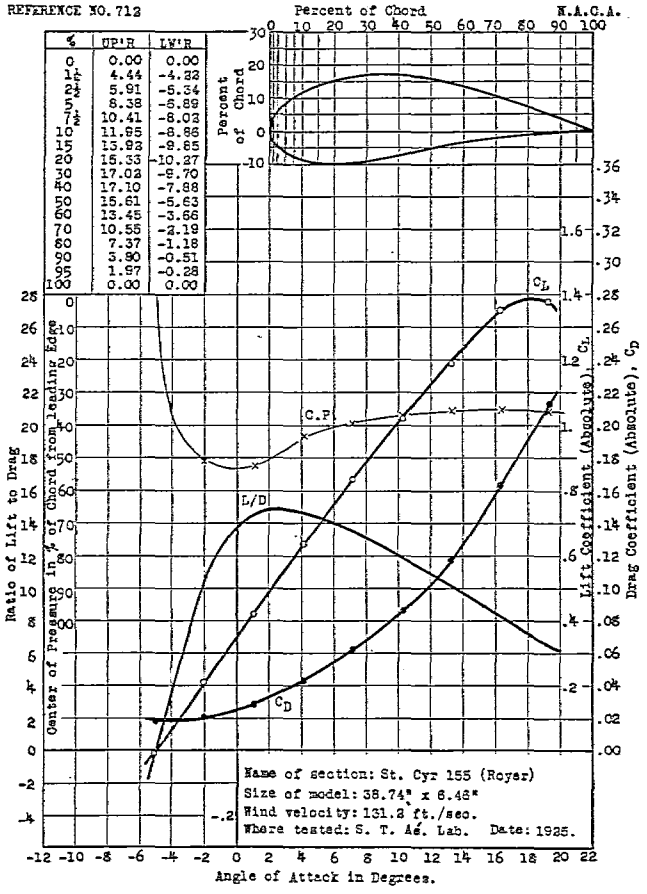
%	UP'R	LW'R
0	0.00	0.00
1¼	1.92	-1.47
2½	2.82	-1.97
5	4.28	-2.54
7½	5.58	-2.79
10	6.49	-2.98
15	7.95	-2.98
20	9.03	-2.89
30	10.38	-0.85
40	10.58	0.85
50	9.84	1.56
60	8.32	1.55
70	6.54	1.41
80	4.57	1.07
90	2.48	0.54
95	1.35	0.23
100	0.00	0.00

REFERENCE NO. 711



%	UP'R	LW'R
0	0.00	0.00
1¼	3.95	-3.67
2½	5.36	-4.80
5	7.62	-6.21
7½	9.35	-7.06
10	10.73	-7.82
15	12.70	-8.33
20	14.00	-8.47
30	15.52	-7.82
40	15.38	-5.79
50	13.75	-3.67
60	11.77	-1.92
70	9.28	-0.79
80	6.49	-0.14
90	3.39	0.14
95	1.69	0.14
100	0.00	0.00

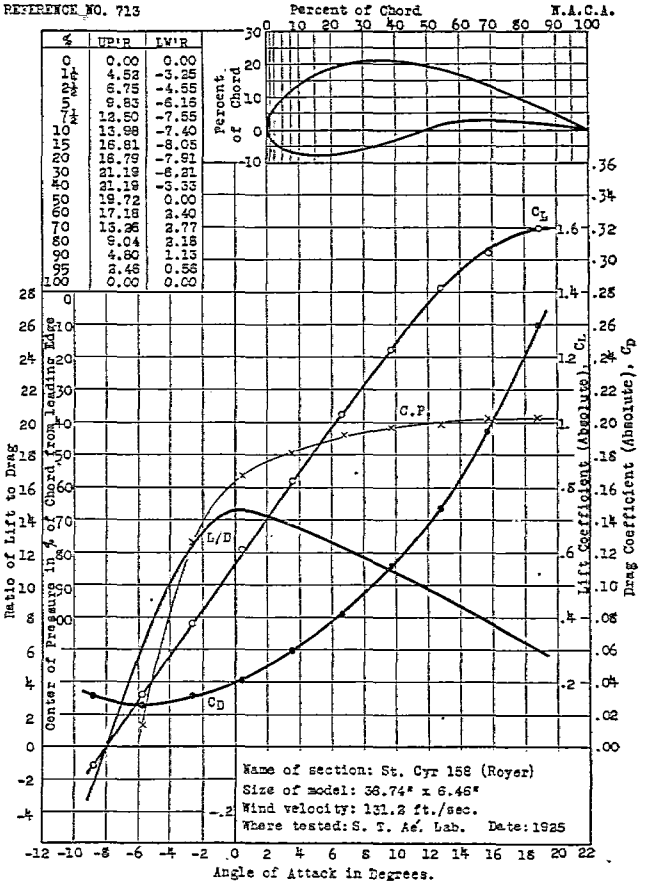
REFERENCE NO. 712



%	UPPER	LOWER
0	0.00	0.00
1¼	4.44	-4.32
2½	5.91	-5.34
5	8.38	-6.89
7½	10.41	-8.03
10	11.85	-8.86
15	13.92	-9.65
20	15.33	-10.27
30	17.02	-9.70
40	17.10	-7.88
50	15.61	-5.63
60	13.45	-3.66
70	10.55	-2.19
80	7.37	-1.18
90	3.90	-0.51
95	1.97	-0.28
100	0.00	0.00

Name of section: St. Cyr 155 (Royer)
Size of model: 38.74" x 6.46"
Wind velocity: 131.2 ft./sec.
Where tested: S. T. Aé. Lab. Date: 1925.

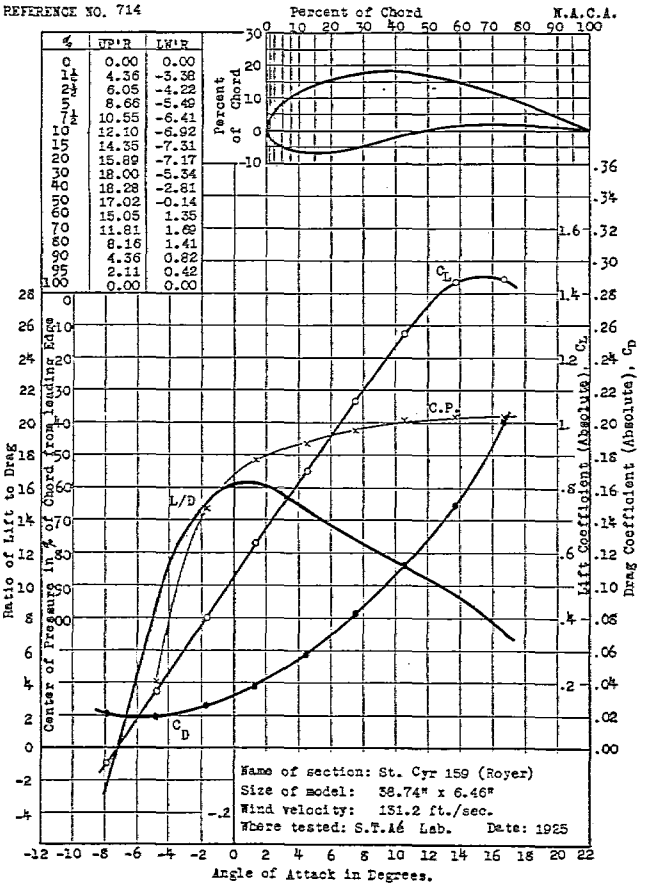
REFERENCE NO. 713



%	UPPER	LOWER
0	0.00	0.00
1¼	4.58	-3.25
2½	6.75	-4.55
5	9.83	-6.15
7½	12.50	-7.55
10	13.98	-7.40
15	16.81	-8.05
20	18.79	-7.91
30	21.19	-6.21
40	21.19	-3.33
50	19.72	0.00
60	17.18	3.40
70	13.36	2.77
80	9.04	2.15
90	4.80	1.13
95	2.46	0.56
100	0.00	0.00

Name of section: St. Cyr 158 (Royer)
Size of model: 38.74" x 6.46"
Wind velocity: 131.2 ft./sec.
Where tested: S. T. Aé. Lab. Date: 1925

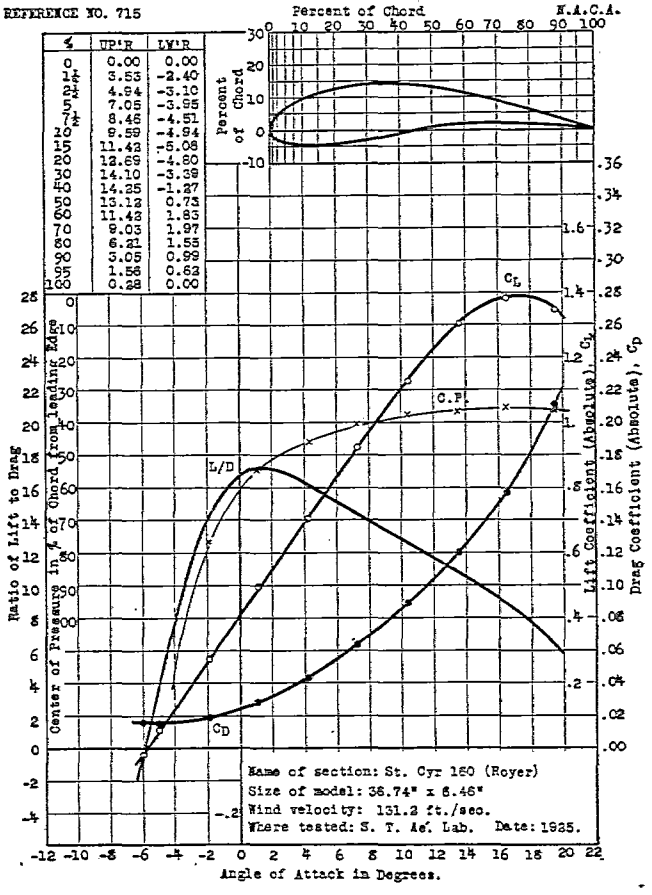
REFERENCE NO. 714



%	UPPER	LOWER
0	0.00	0.00
1¼	4.36	-3.38
2½	6.05	-4.22
5	8.66	-5.49
7½	10.55	-6.41
10	12.10	-6.92
15	14.35	-7.31
20	15.89	-7.17
30	18.00	-5.34
40	18.28	-2.81
50	17.02	-0.14
60	15.05	1.35
70	11.81	1.69
80	8.16	1.41
90	4.36	0.82
95	2.11	0.42
100	0.00	0.00

Name of section: St. Cyr 159 (Royer)
Size of model: 38.74" x 6.46"
Wind velocity: 131.2 ft./sec.
Where tested: S.T.Aé Lab. Date: 1925

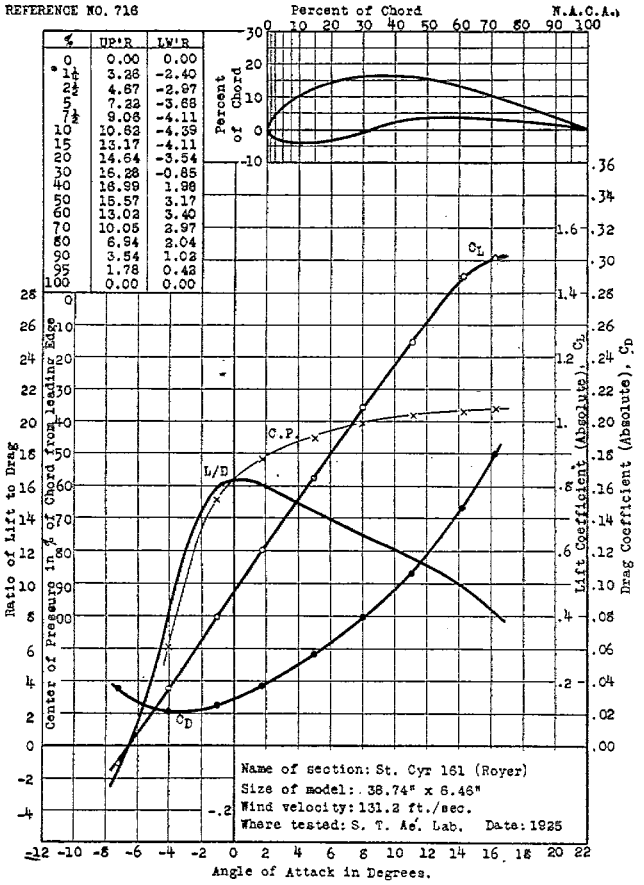
REFERENCE NO. 715



%	UPPER	LOWER
0	0.00	0.00
1¼	3.53	-2.40
2½	4.84	-3.10
5	7.05	-3.95
7½	8.46	-4.51
10	9.59	-4.94
15	11.43	-5.08
20	12.69	-4.80
30	14.10	-3.38
40	14.25	-1.27
50	13.12	0.73
60	11.43	1.83
70	9.03	1.97
80	6.21	1.55
90	3.05	0.99
95	1.56	0.62
100	0.28	0.00

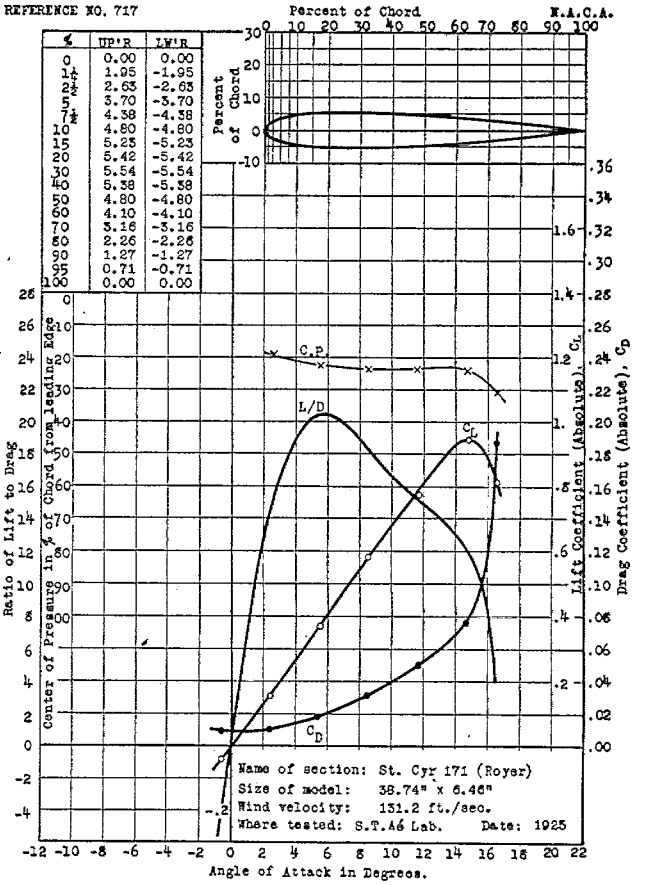
Name of section: St. Cyr 160 (Royer)
Size of model: 38.74" x 6.46"
Wind velocity: 131.2 ft./sec.
Where tested: S. T. Aé. Lab. Date: 1925.

REFERENCE NO. 716



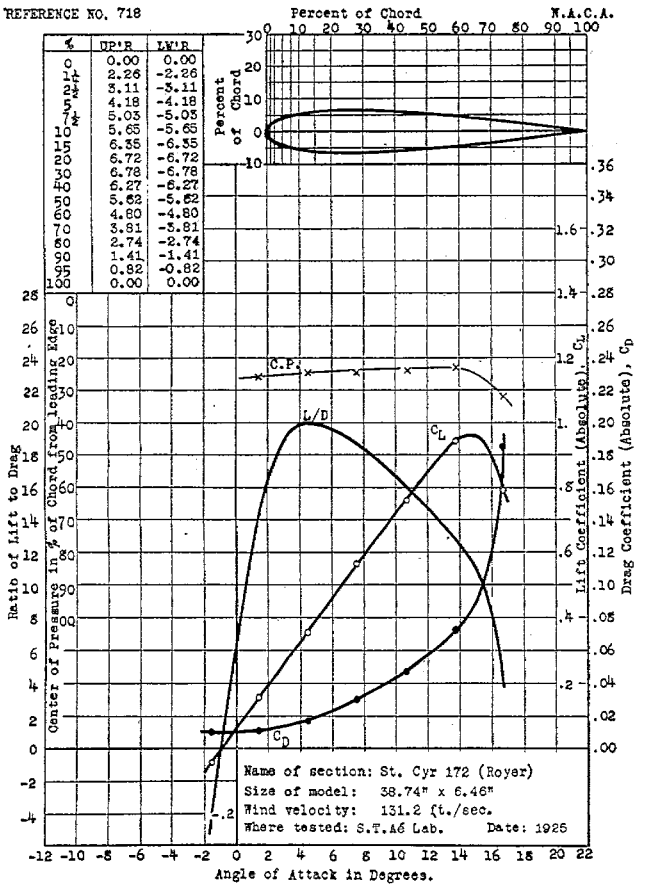
%	UP'R	LW'R
0	0.00	0.00
1¼	3.26	-2.40
2½	4.67	-2.97
5	7.22	-3.68
7½	9.06	-4.11
10	10.62	-4.39
15	13.17	-4.11
20	14.64	-3.54
30	16.28	-0.85
40	16.99	1.98
50	15.57	3.17
60	13.02	3.40
70	10.05	2.97
80	6.94	2.04
90	3.54	1.02
95	1.78	0.48
100	0.00	0.00

REFERENCE NO. 717



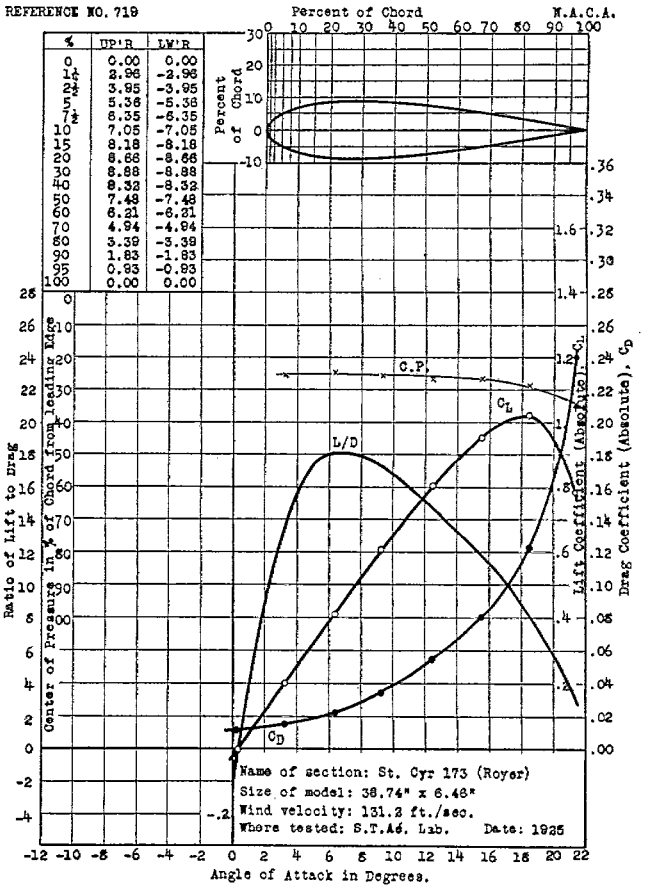
%	UP'R	LW'R
0	0.00	0.00
1¼	1.95	-1.95
2½	2.63	-2.63
5	3.70	-3.70
7½	4.38	-4.38
10	4.80	-4.80
15	5.23	-5.23
20	5.42	-5.42
30	5.54	-5.54
40	5.38	-5.38
50	4.80	-4.80
60	4.10	-4.10
70	3.16	-3.16
80	2.26	-2.26
90	1.27	-1.27
95	0.71	-0.71
100	0.00	0.00

REFERENCE NO. 718



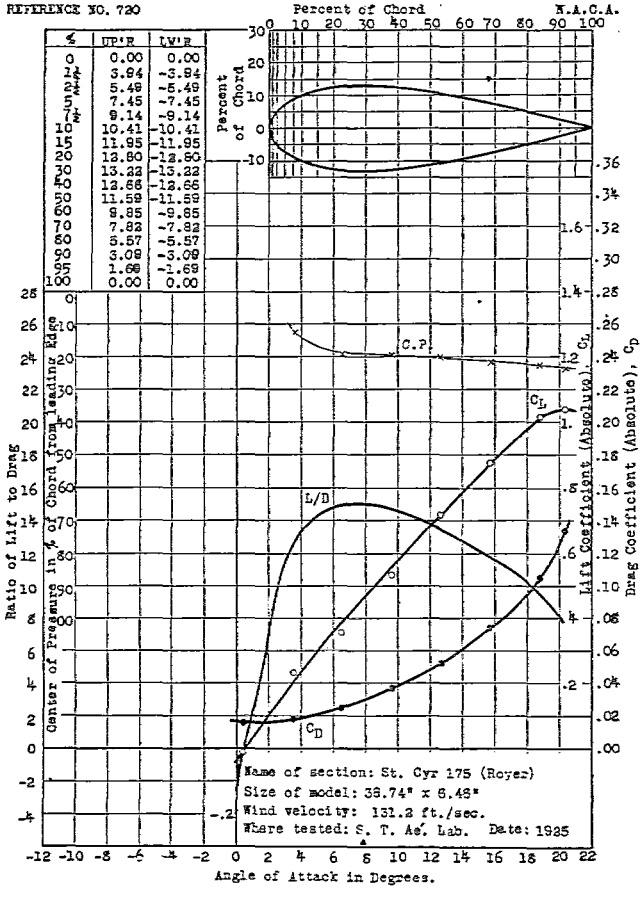
%	UP'R	LW'R
0	0.00	0.00
1¼	2.26	-2.26
2½	3.11	-3.11
5	4.18	-4.18
7½	5.03	-5.03
10	5.65	-5.65
15	6.35	-6.35
20	6.72	-6.72
30	6.78	-6.78
40	6.27	-6.27
50	5.62	-5.62
60	4.80	-4.80
70	3.81	-3.81
80	2.74	-2.74
90	1.41	-1.41
95	0.82	-0.82
100	0.00	0.00

REFERENCE NO. 719



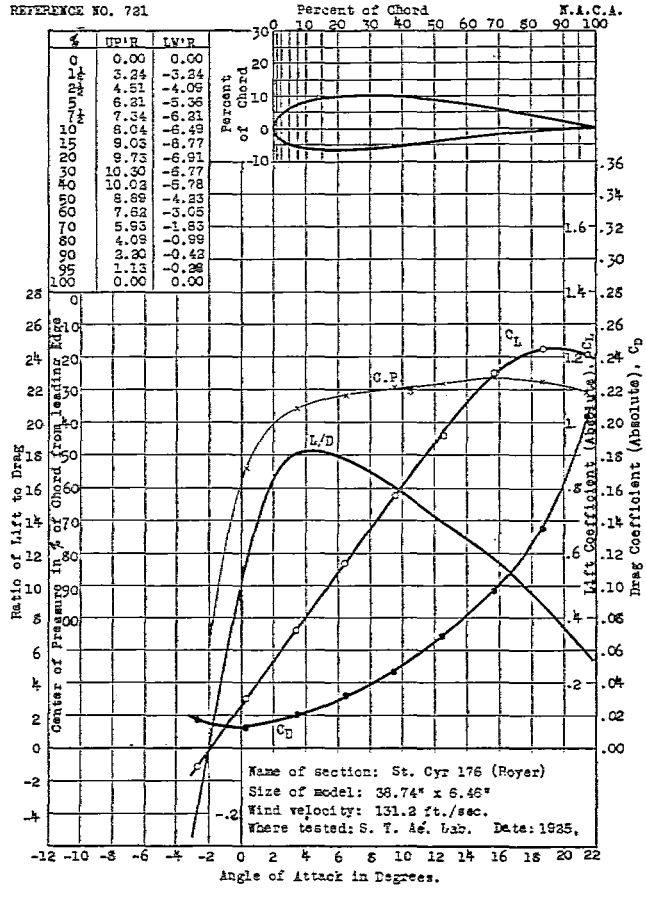
%	UP'R	LW'R
0	0.00	0.00
1¼	2.96	-2.96
2½	3.95	-3.95
5	5.36	-5.36
7½	6.35	-6.35
10	7.05	-7.05
15	8.18	-8.18
20	8.66	-8.66
30	8.88	-8.88
40	8.32	-8.32
50	7.48	-7.48
60	6.21	-6.21
70	4.94	-4.94
80	3.39	-3.39
90	1.83	-1.83
95	0.93	-0.93
100	0.00	0.00

REFERENCE NO. 720



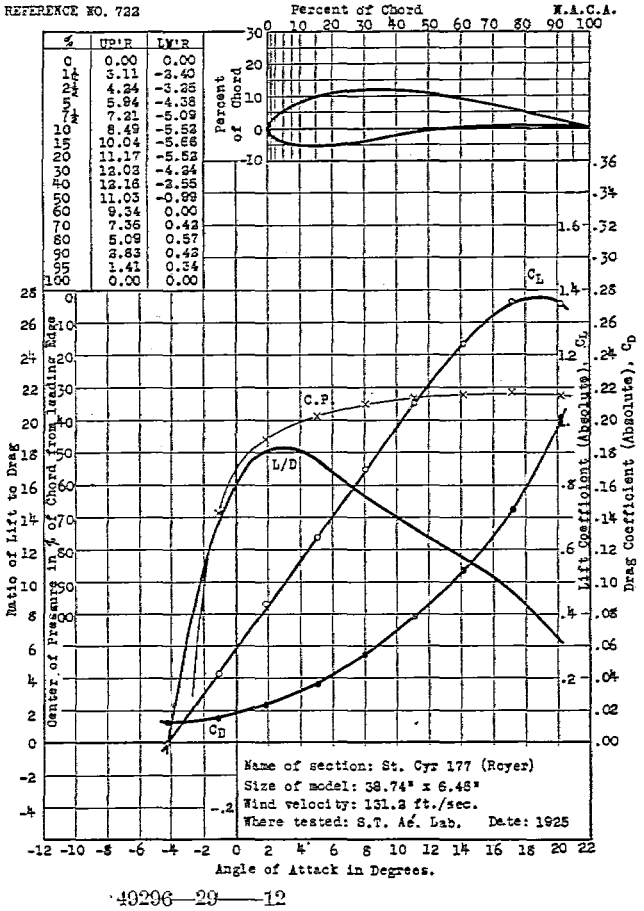
%	UPPER	LOWER
0	0.00	0.00
1¼	3.94	-3.84
2½	5.49	-5.49
5	7.45	-7.45
7½	8.14	-9.14
10	10.41	-10.41
15	11.95	-11.95
20	13.80	-12.80
30	13.22	-13.22
40	12.66	-12.66
50	11.59	-11.59
60	9.85	-9.85
70	7.82	-7.82
80	5.57	-5.57
90	3.09	-3.09
95	1.68	-1.68
100	0.00	0.00

REFERENCE NO. 721



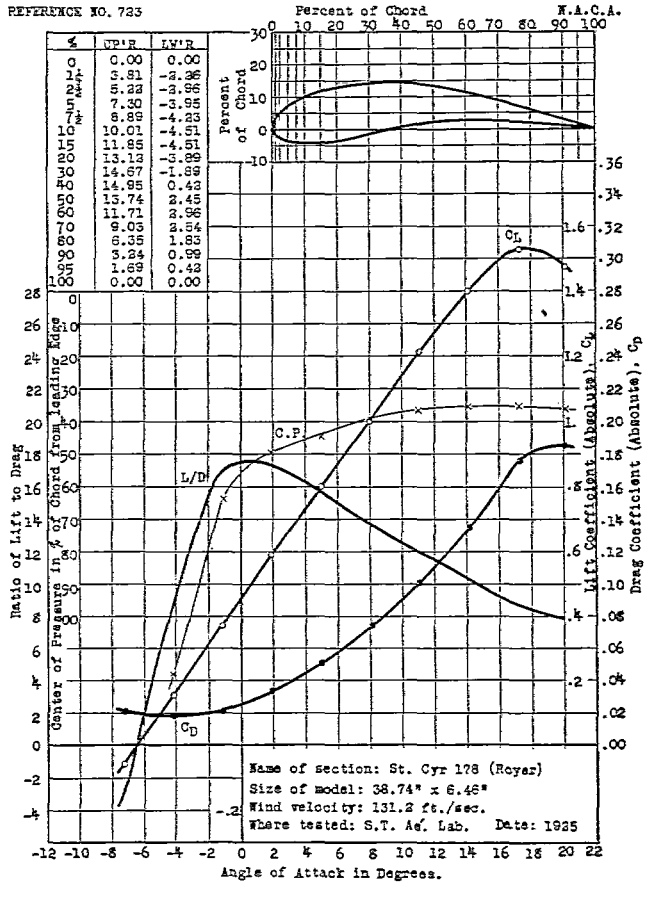
%	UPPER	LOWER
0	0.00	0.00
1¼	3.24	-3.24
2½	4.57	-4.06
5	6.21	-5.36
7½	7.04	-6.21
10	8.04	-6.49
15	9.03	-6.77
20	9.73	-6.91
30	10.30	-6.77
40	10.02	-5.78
50	8.89	-4.33
60	7.62	-3.05
70	5.95	-1.83
80	4.09	-0.99
90	2.20	-0.42
95	1.13	-0.28
100	0.00	0.00

REFERENCE NO. 722



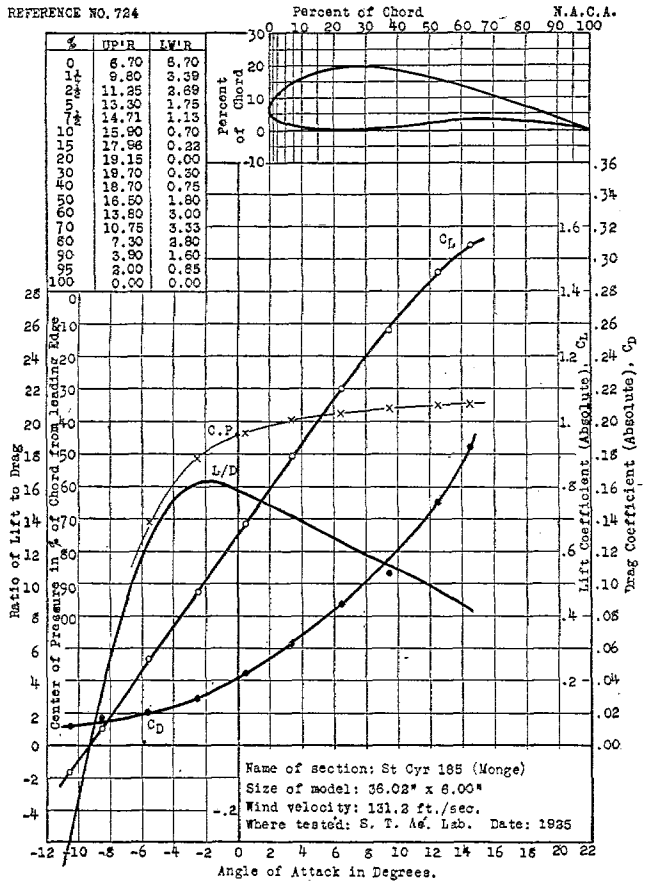
%	UPPER	LOWER
0	0.00	0.00
1¼	3.11	-3.40
2½	4.24	-3.28
5	5.84	-4.38
7½	7.21	-5.09
10	8.49	-5.52
15	10.04	-5.66
20	11.17	-5.52
30	12.03	-4.24
40	12.16	-2.55
50	11.03	-0.89
60	9.34	0.00
70	7.36	0.43
80	5.09	0.57
90	2.83	0.43
95	1.41	0.34
100	0.00	0.00

REFERENCE NO. 723



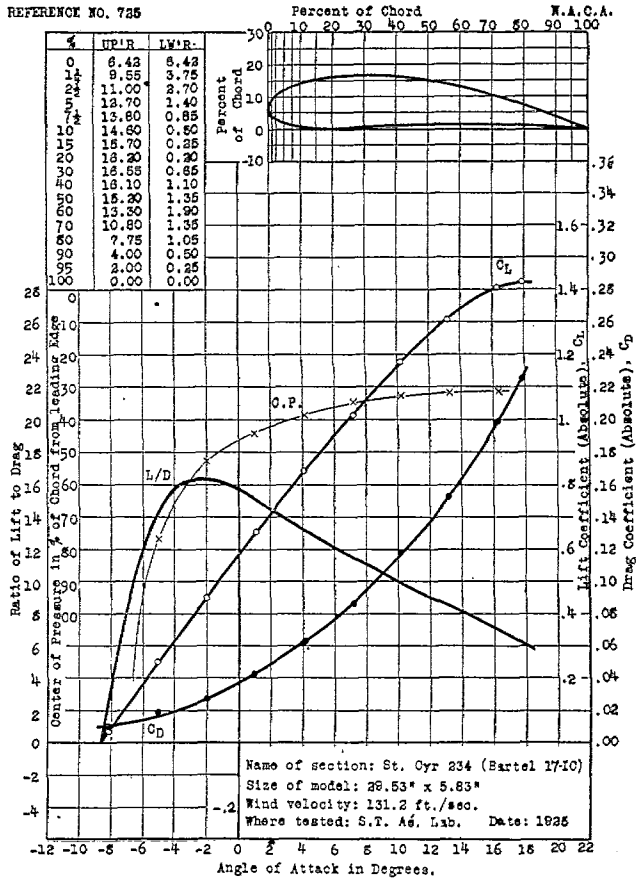
%	UPPER	LOWER
0	0.00	0.00
1¼	3.81	-2.36
2½	5.23	-2.96
5	7.30	-3.95
7½	8.89	-4.25
10	10.01	-4.51
15	11.85	-4.51
20	13.13	-5.89
30	14.67	-1.89
40	14.95	0.42
50	13.74	2.45
60	11.71	3.96
70	9.05	3.54
80	6.35	1.83
90	3.24	0.99
95	1.69	0.42
100	0.00	0.00

REFERENCE NO. 724



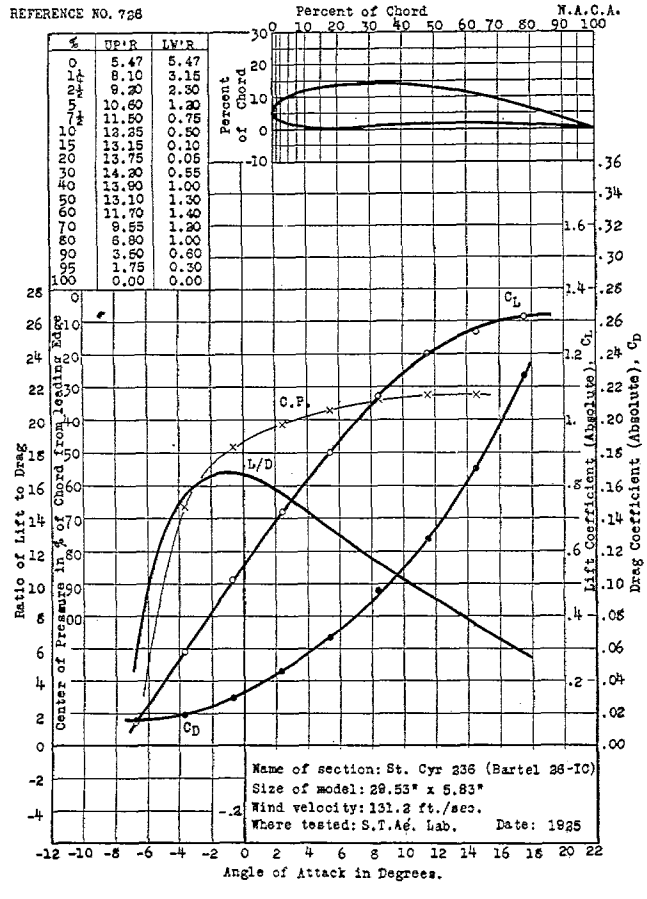
%	UP'R	LW'R
0	6.70	6.70
1¼	9.80	3.39
2½	11.35	2.69
5	13.30	1.75
7½	14.71	1.13
10	15.90	0.70
15	17.98	0.33
20	19.15	0.00
30	19.70	0.30
40	18.70	0.75
50	16.50	1.80
60	13.80	3.00
70	10.75	3.33
80	7.30	2.80
90	3.90	1.60
95	2.00	0.85
100	0.00	0.00

REFERENCE NO. 725



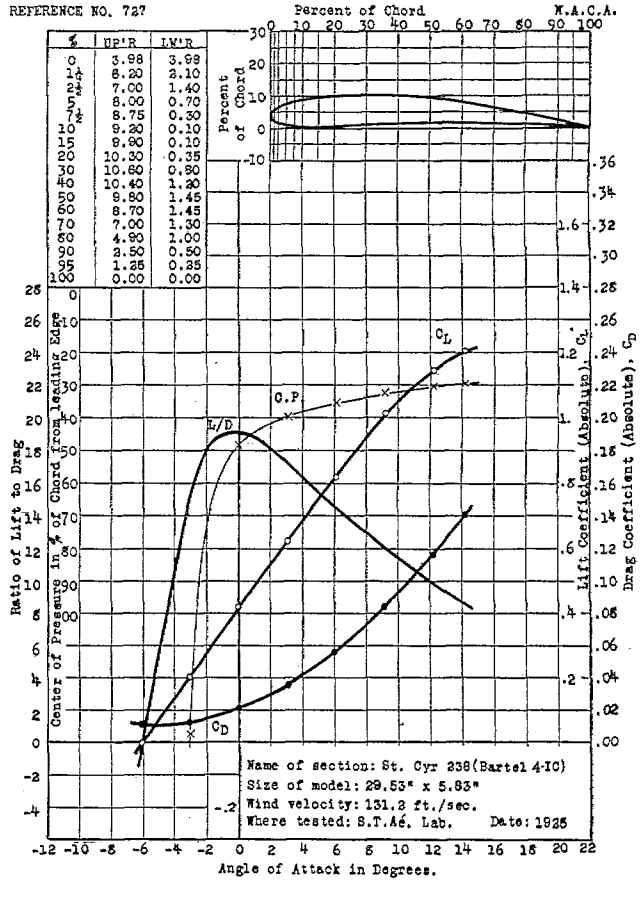
%	UP'R	LW'R
0	6.42	6.42
1¼	9.55	3.75
2½	11.00	2.70
5	12.70	1.40
7½	13.80	0.85
10	14.60	0.50
15	15.70	0.25
20	16.20	0.20
30	16.55	0.65
40	16.10	1.10
50	15.20	1.35
60	13.30	1.90
70	10.80	1.35
80	7.75	1.05
90	4.00	0.50
95	2.00	0.25
100	0.00	0.00

REFERENCE NO. 726



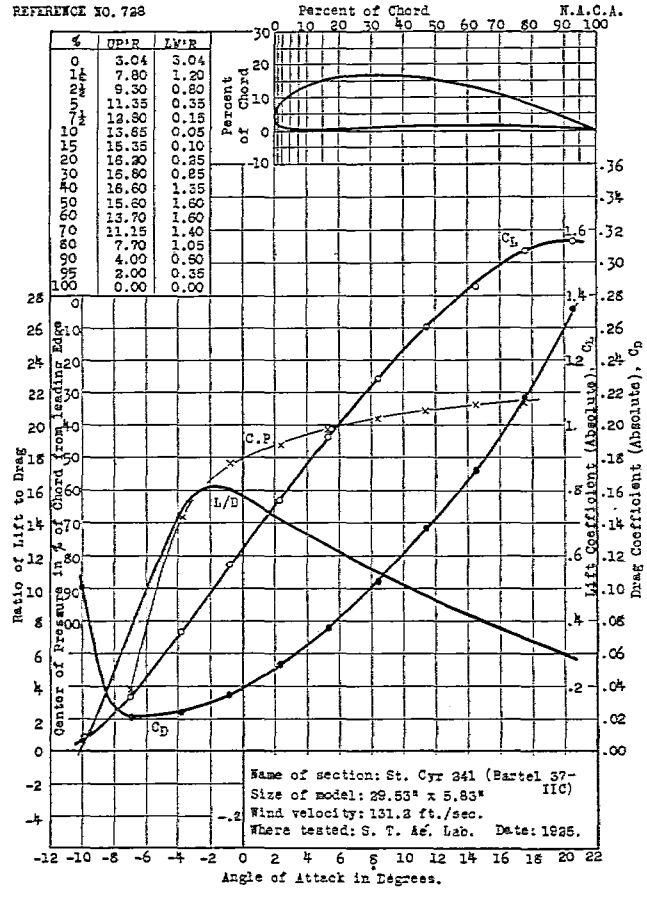
%	UP'R	LW'R
0	5.47	5.47
1¼	8.10	3.15
2½	9.20	2.30
5	10.60	1.20
7½	11.50	0.75
10	12.35	0.50
15	13.15	0.10
20	13.75	0.05
30	14.20	0.55
40	13.90	1.00
50	13.10	1.30
60	11.70	1.40
70	9.55	1.20
80	6.80	1.00
90	3.50	0.60
95	1.75	0.30
100	0.00	0.00

REFERENCE NO. 727



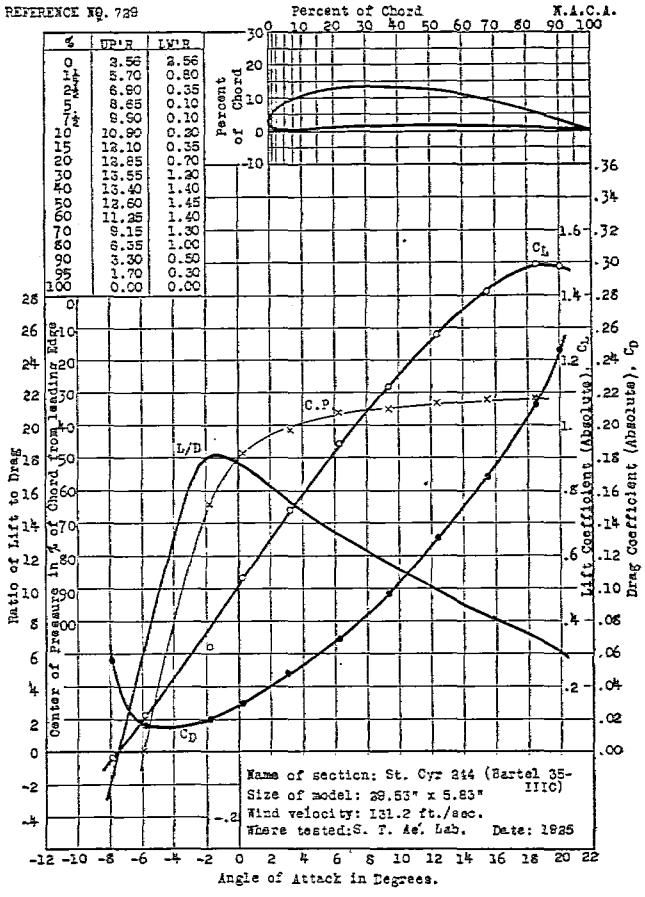
%	UP'R	LW'R
0	3.98	3.98
1¼	6.20	2.10
2½	7.00	1.40
5	8.00	0.70
7½	8.75	0.30
10	9.20	0.10
15	9.90	0.10
20	10.30	0.35
30	10.80	0.80
40	10.40	1.20
50	9.80	1.45
60	8.70	1.45
70	7.00	1.30
80	4.80	1.00
90	2.50	0.50
95	1.25	0.25
100	0.00	0.00

REFERENCE NO. 728



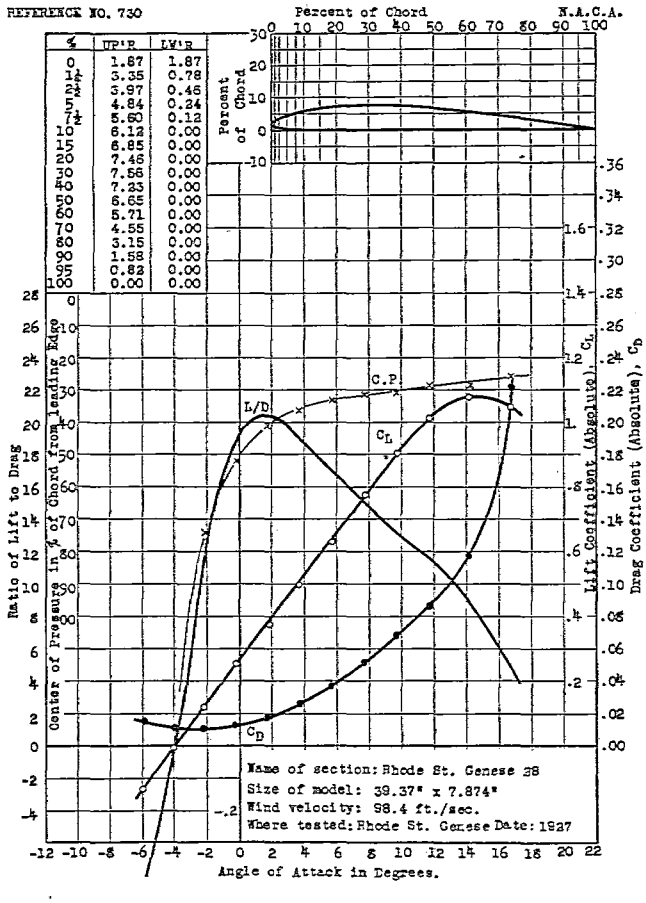
%	UP'R	LW'R
0	3.04	3.04
1¼	7.80	1.20
2½	9.30	0.80
5	11.35	0.35
7½	12.80	0.15
10	13.65	0.05
15	15.35	0.10
20	16.20	0.25
30	16.80	0.85
40	16.60	1.35
50	15.60	1.60
60	13.70	1.60
70	11.15	1.40
80	7.70	1.05
90	4.00	0.50
95	2.00	0.35
100	0.00	0.00

REFERENCE NO. 729



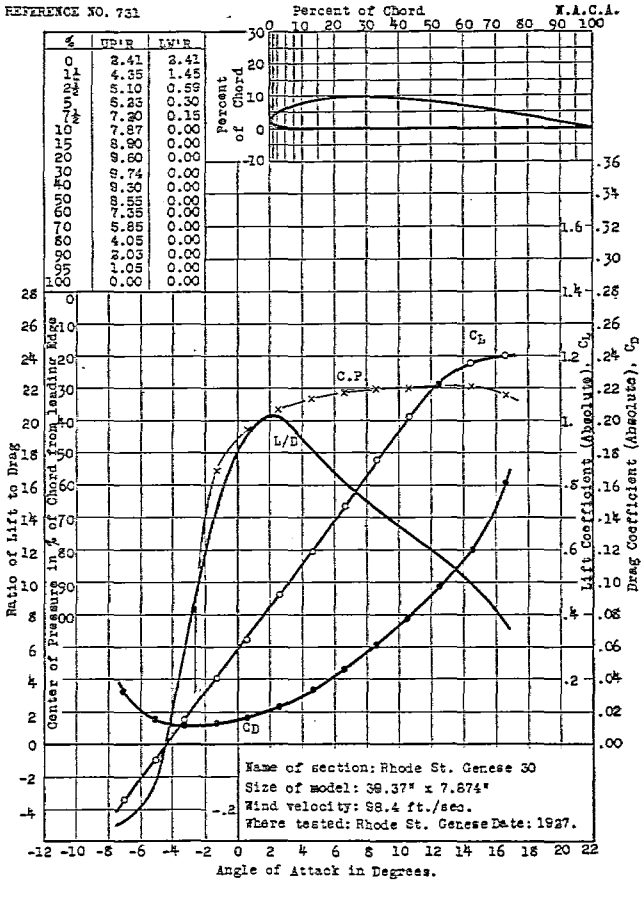
%	UP'R	LW'R
0	2.56	2.56
1¼	5.70	0.80
2½	6.80	0.35
5	8.85	0.10
7½	9.50	0.10
10	10.90	0.20
15	12.10	0.35
20	12.85	0.70
30	13.55	1.20
40	13.40	1.40
50	12.60	1.45
60	11.25	1.40
70	9.15	1.30
80	6.35	1.00
90	3.30	0.50
95	1.70	0.30
100	0.00	0.00

REFERENCE NO. 730



%	UP'R	LW'R
0	1.87	1.87
1¼	3.35	0.78
2½	3.97	0.46
5	4.84	0.24
7½	5.60	0.12
10	6.12	0.00
15	6.85	0.00
20	7.46	0.00
30	7.56	0.00
40	7.23	0.00
50	6.65	0.00
60	5.71	0.00
70	4.55	0.00
80	3.15	0.00
90	1.58	0.00
95	0.82	0.00
100	0.00	0.00

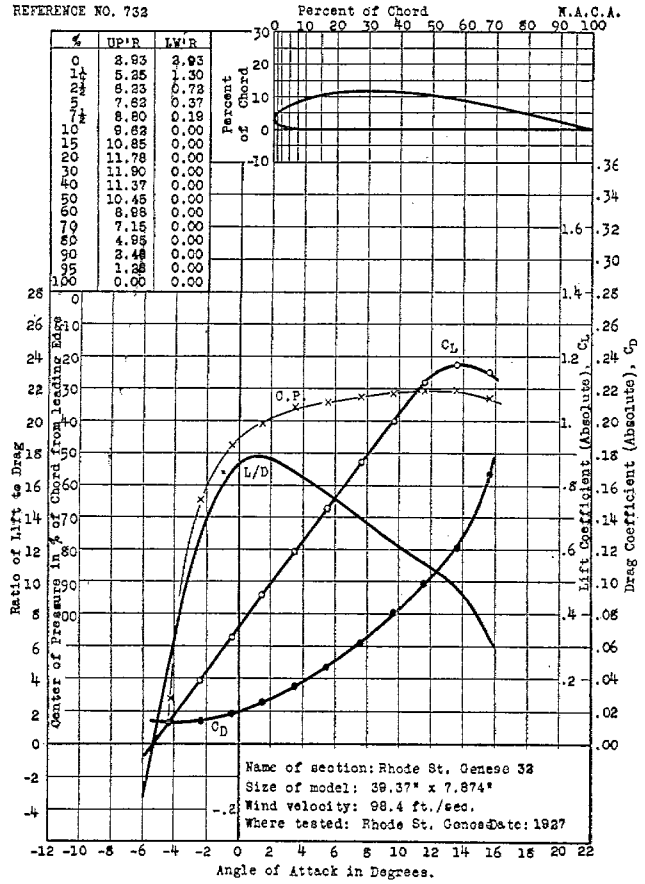
REFERENCE NO. 731



%	UP'R	LW'R
0	2.41	2.41
1¼	4.35	1.45
2½	5.10	0.58
5	6.25	0.30
7½	7.20	0.15
10	7.87	0.00
15	8.90	0.00
20	9.60	0.00
30	9.74	0.00
40	9.30	0.00
50	8.55	0.00
60	7.35	0.00
70	5.85	0.00
80	4.05	0.00
90	2.03	0.00
95	1.03	0.00
100	0.00	0.00

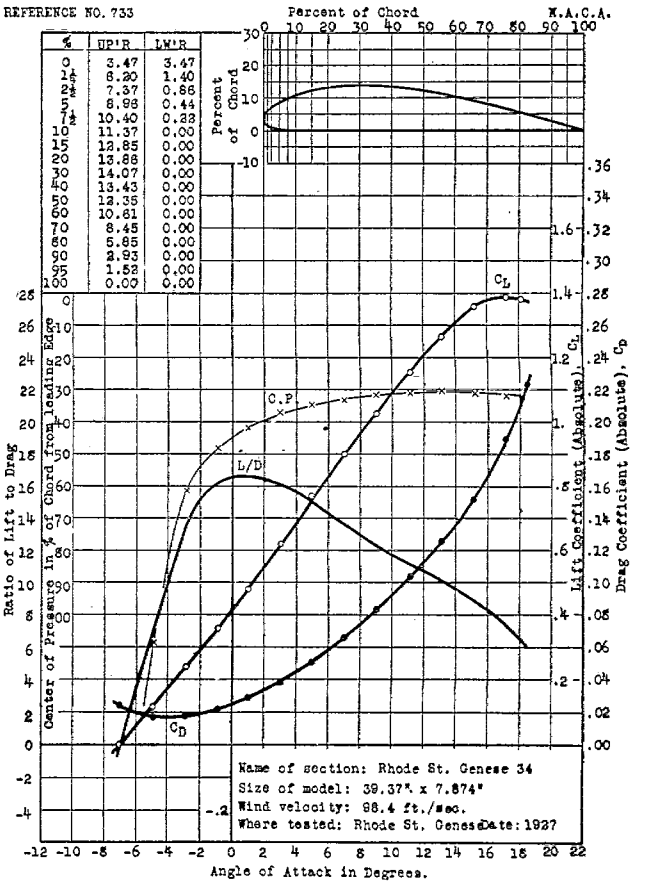
REFERENCE NO. 732

%	UP'R	LW'R
0	8.93	8.93
1¼	5.25	1.30
2½	8.23	0.73
5	7.62	0.37
7½	8.80	0.19
10	9.62	0.00
15	10.85	0.00
20	11.78	0.00
30	11.90	0.00
40	11.37	0.00
50	10.45	0.00
60	8.98	0.00
70	7.15	0.00
80	4.95	0.00
90	2.48	0.00
95	1.38	0.00
100	0.00	0.00



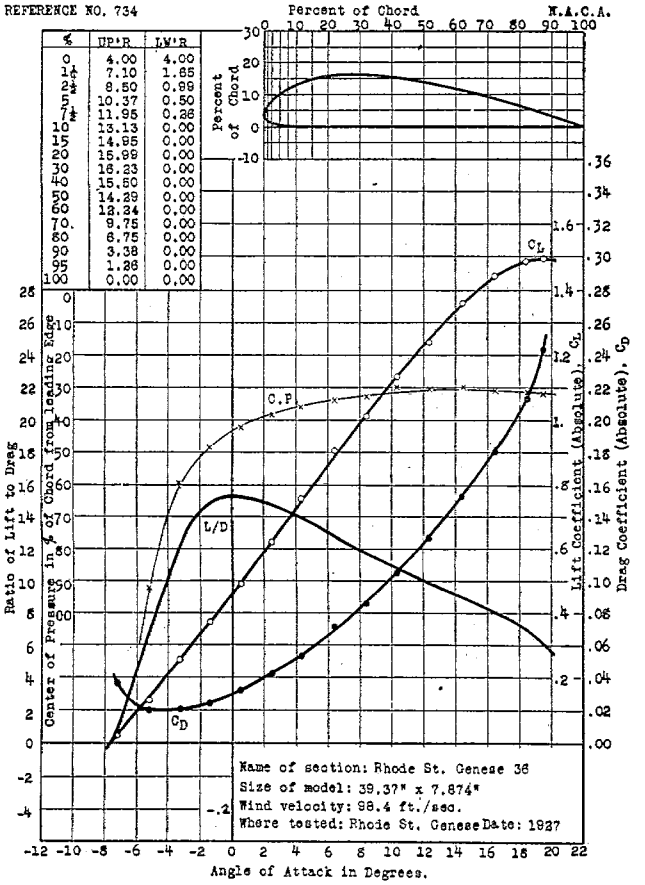
REFERENCE NO. 733

%	UP'R	LW'R
0	3.47	3.47
1¼	6.20	1.40
2½	7.37	0.66
5	8.98	0.44
7½	10.40	0.23
10	11.37	0.00
15	12.85	0.00
20	13.88	0.00
30	14.07	0.00
40	13.43	0.00
50	12.35	0.00
60	10.61	0.00
70	8.45	0.00
80	5.85	0.00
90	2.93	0.00
95	1.52	0.00
100	0.00	0.00



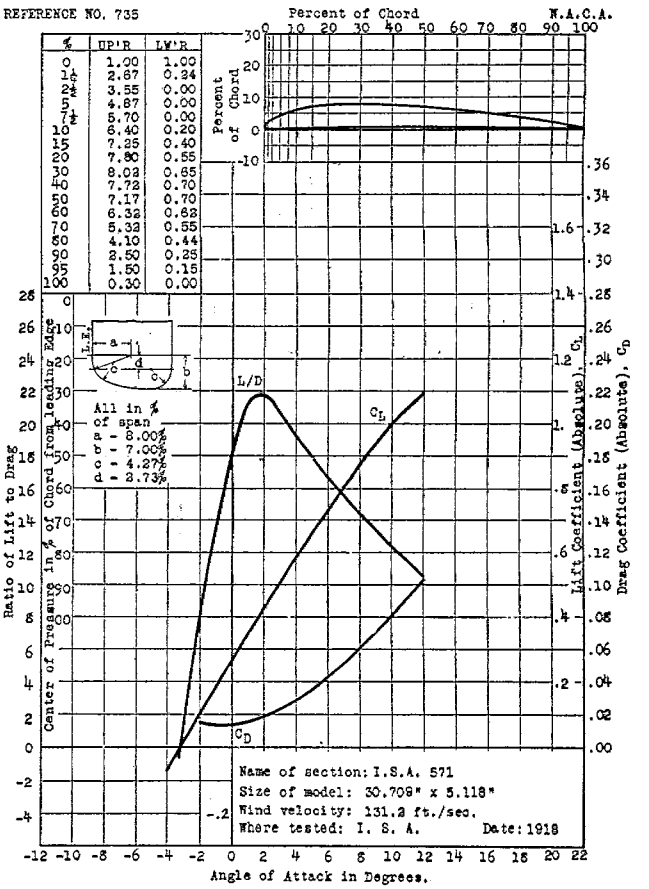
REFERENCE NO. 734

%	UP'R	LW'R
0	4.00	4.00
1¼	7.10	1.65
2½	8.60	0.99
5	10.37	0.50
7½	11.95	0.26
10	13.13	0.00
15	14.85	0.00
20	15.99	0.00
30	16.23	0.00
40	15.60	0.00
50	14.29	0.00
60	12.34	0.00
70	9.75	0.00
80	6.75	0.00
90	3.38	0.00
95	1.26	0.00
100	0.00	0.00

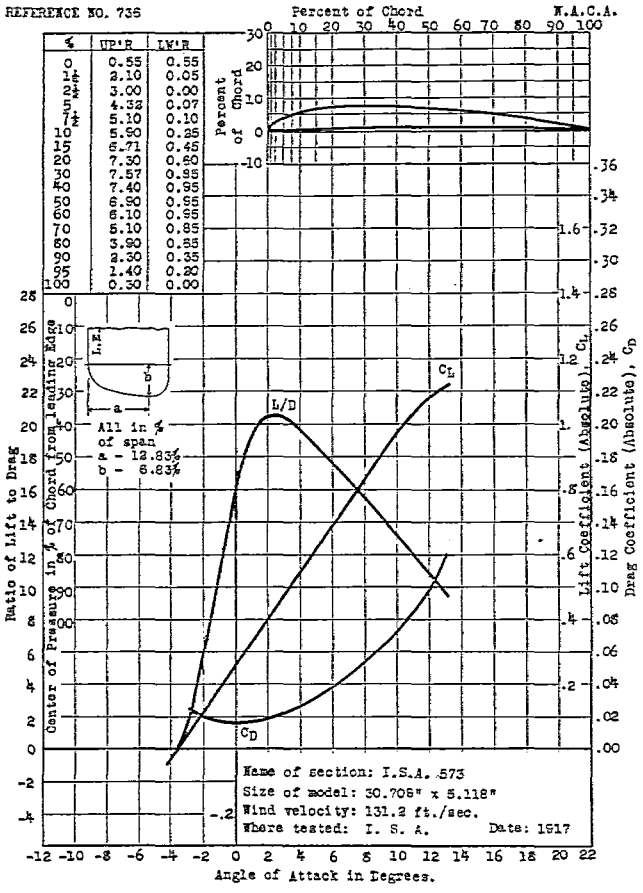


REFERENCE NO. 735

%	UP'R	LW'R
0	1.00	1.00
1¼	2.87	0.24
2½	3.55	0.00
5	4.87	0.00
7½	5.70	0.00
10	6.40	0.20
15	7.25	0.40
20	7.80	0.55
30	8.02	0.65
40	7.72	0.70
50	7.17	0.70
60	6.32	0.62
70	5.32	0.55
80	4.10	0.44
90	2.50	0.25
95	1.50	0.15
100	0.30	0.00



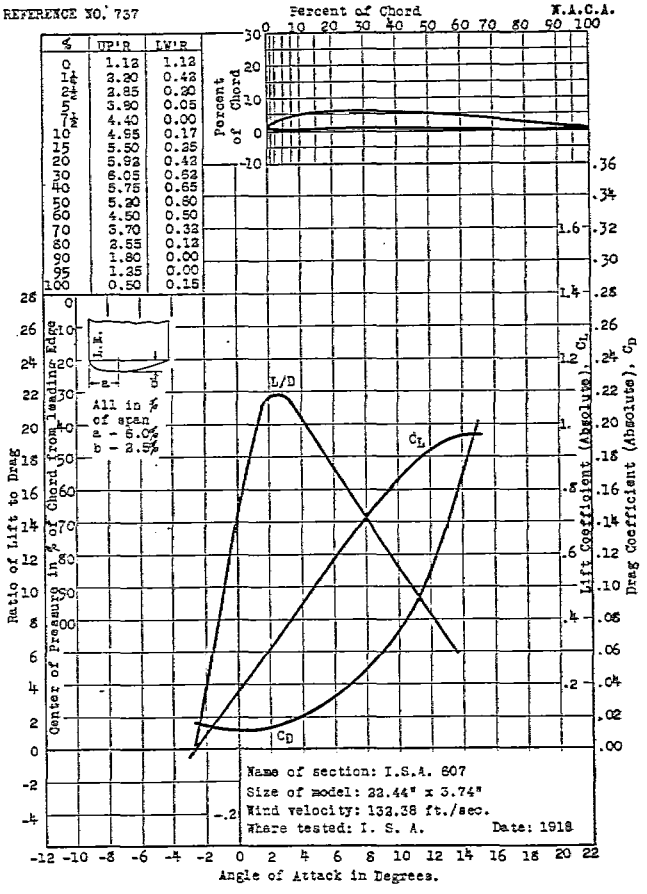
REFERENCE NO. 736



%	UP'R	LW'R
0	0.55	0.55
1¼	2.10	0.05
2½	3.00	0.00
5	4.32	0.07
7½	5.10	0.10
10	5.90	0.25
15	6.71	0.45
20	7.30	0.60
30	7.57	0.95
40	7.40	0.95
50	6.90	0.95
60	6.10	0.95
70	5.10	0.85
80	3.90	0.65
90	2.30	0.35
95	1.40	0.20
100	0.30	0.00

Name of section: I.S.A. 573
Size of model: 30.708" x 5.118"
Wind velocity: 131.2 ft./sec.
Where tested: I. S. A. Date: 1917

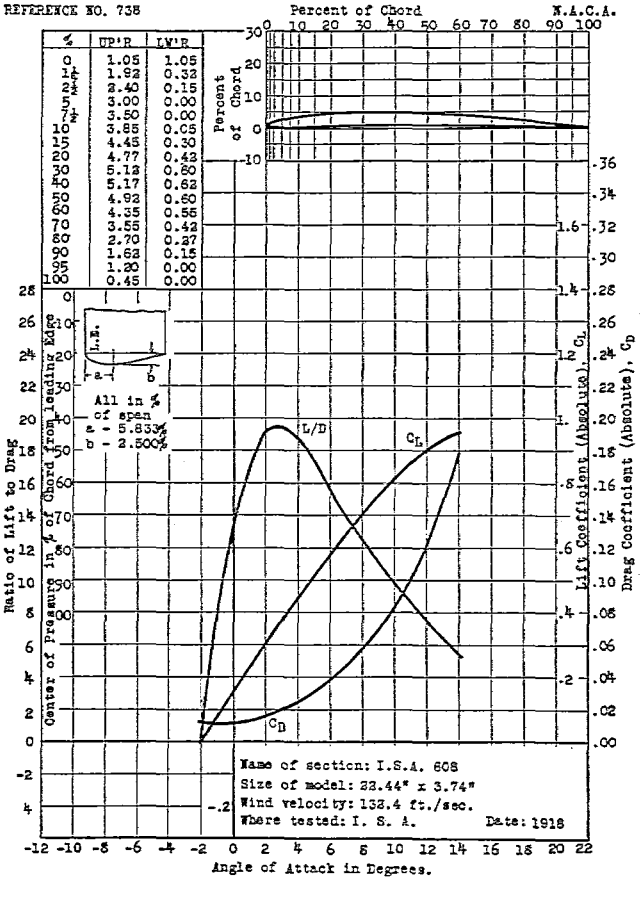
REFERENCE NO. 737



%	UP'R	LW'R
0	1.12	1.12
1¼	3.20	0.43
2½	2.85	0.28
5	3.98	0.05
7½	4.46	0.00
10	4.95	0.17
15	5.50	0.35
20	5.92	0.42
30	6.05	0.52
40	5.75	0.65
50	5.20	0.80
60	4.50	0.50
70	3.70	0.32
80	2.55	0.12
90	1.80	0.00
95	1.35	0.00
100	0.50	0.15

Name of section: I.S.A. 607
Size of model: 22.44" x 3.74"
Wind velocity: 132.38 ft./sec.
Where tested: I. S. A. Date: 1918

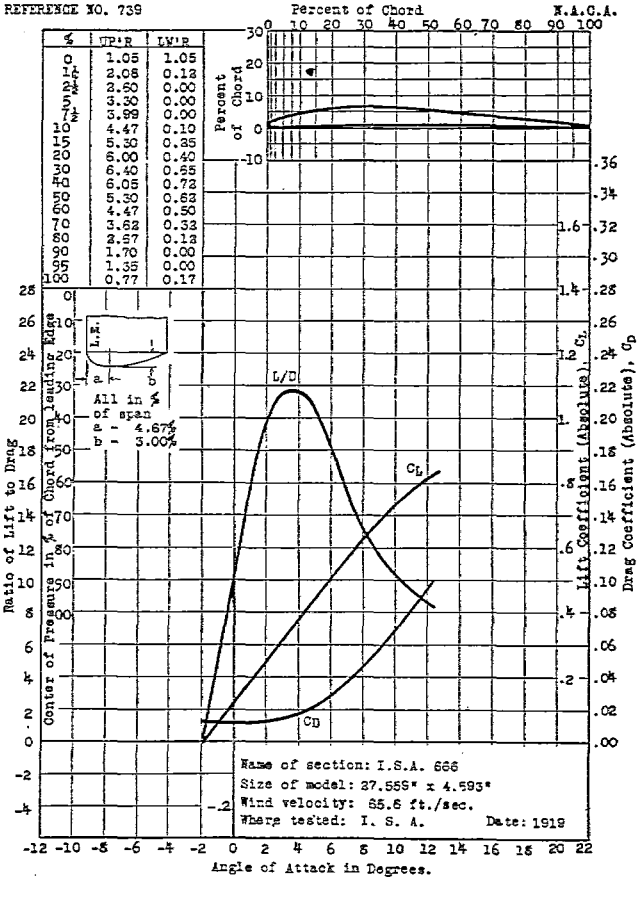
REFERENCE NO. 738



%	UP'R	LW'R
0	1.05	1.05
1¼	1.92	0.32
2½	2.40	0.15
5	3.00	0.00
7½	3.50	0.00
10	3.85	0.05
15	4.45	0.30
20	4.77	0.42
30	5.13	0.60
40	5.17	0.62
50	4.92	0.60
60	4.35	0.55
70	3.55	0.42
80	2.70	0.27
90	1.62	0.15
95	1.20	0.00
100	0.45	0.00

Name of section: I.S.A. 608
Size of model: 22.44" x 3.74"
Wind velocity: 132.4 ft./sec.
Where tested: I. S. A. Date: 1918

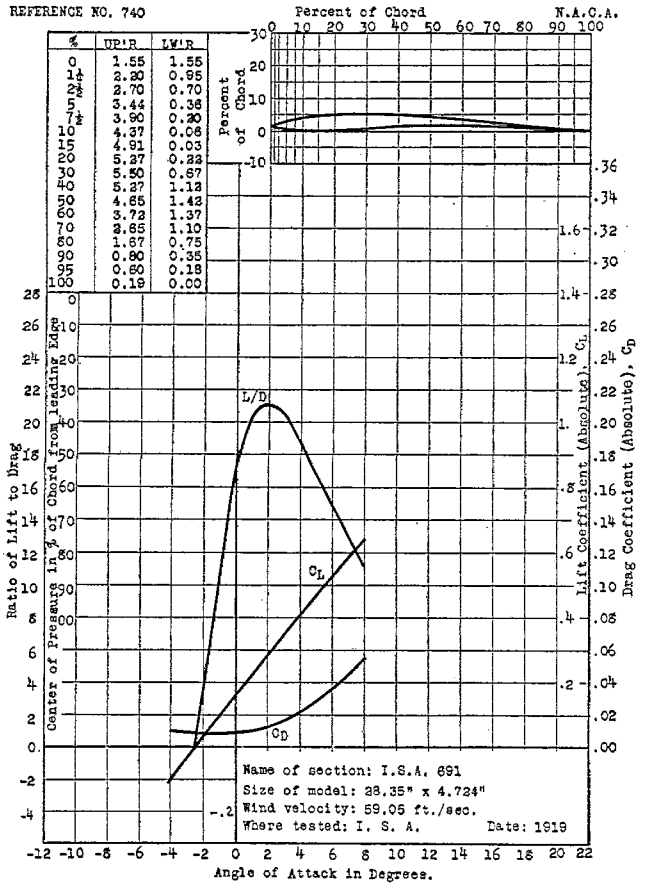
REFERENCE NO. 739



%	UP'R	LW'R
0	1.05	1.05
1¼	2.06	0.12
2½	2.60	0.00
5	3.36	0.00
7½	3.99	0.00
10	4.47	0.10
15	5.30	0.35
20	6.00	0.40
30	6.40	0.55
40	6.05	0.72
50	5.30	0.63
60	4.47	0.50
70	3.62	0.33
80	2.57	0.13
90	1.70	0.00
95	1.35	0.00
100	0.77	0.17

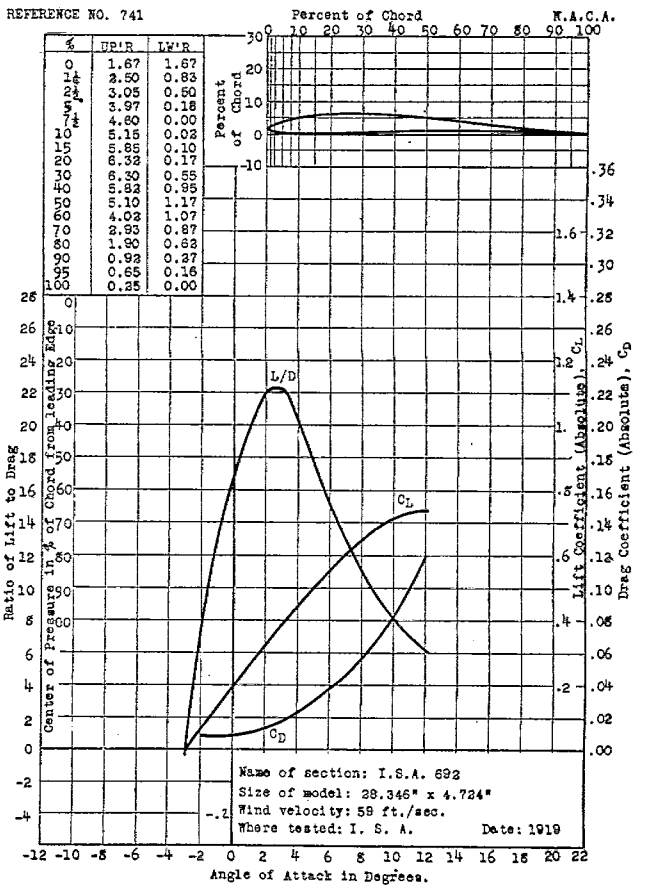
Name of section: I.S.A. 666
Size of model: 37.558" x 4.693"
Wind velocity: 85.6 ft./sec.
Where tested: I. S. A. Date: 1919

REFERENCE NO. 740



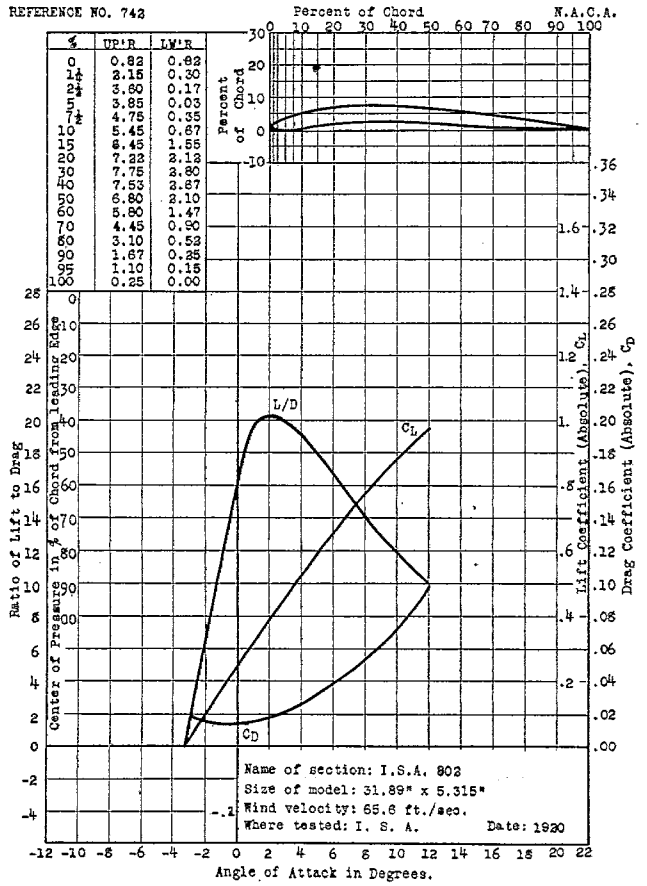
%	UP'R	LW'R
0	1.55	1.55
1¼	2.80	0.95
2½	2.70	0.70
5	3.44	0.36
7½	3.90	0.20
10	4.37	0.06
15	4.91	0.03
20	5.27	0.22
30	5.50	0.67
40	5.27	1.13
50	4.65	1.43
60	3.72	1.37
70	2.65	1.10
80	1.67	0.75
90	0.80	0.35
95	0.60	0.18
100	0.19	0.00

REFERENCE NO. 741



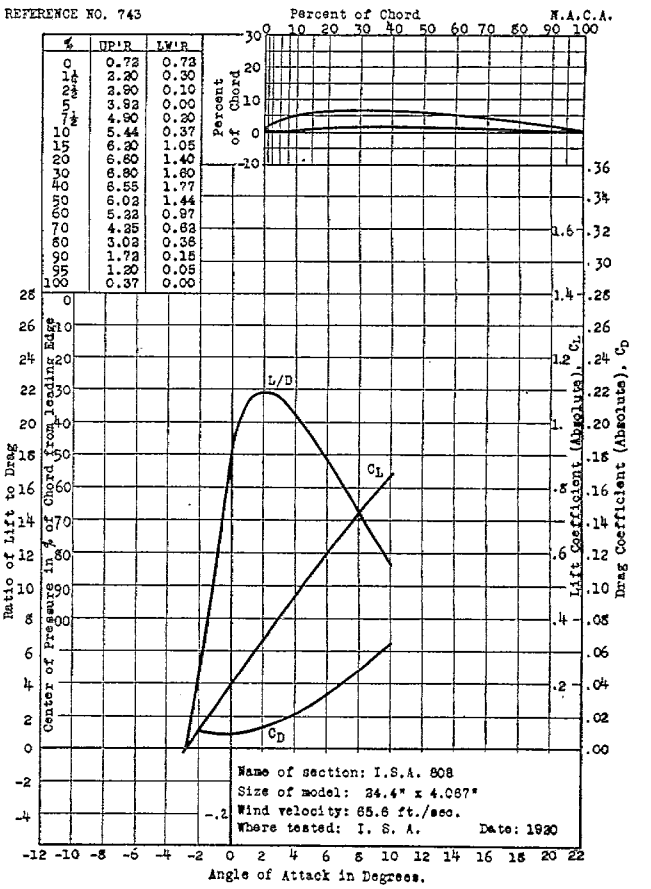
%	UP'R	LW'R
0	1.67	1.67
1¼	2.50	0.83
2½	3.05	0.50
5	3.97	0.18
7½	4.60	0.00
10	5.15	0.02
15	5.85	0.10
20	6.32	0.17
30	6.30	0.55
40	5.82	0.95
50	5.10	1.17
60	4.02	1.07
70	2.93	0.87
80	1.90	0.63
90	0.92	0.27
95	0.65	0.16
100	0.25	0.00

REFERENCE NO. 742



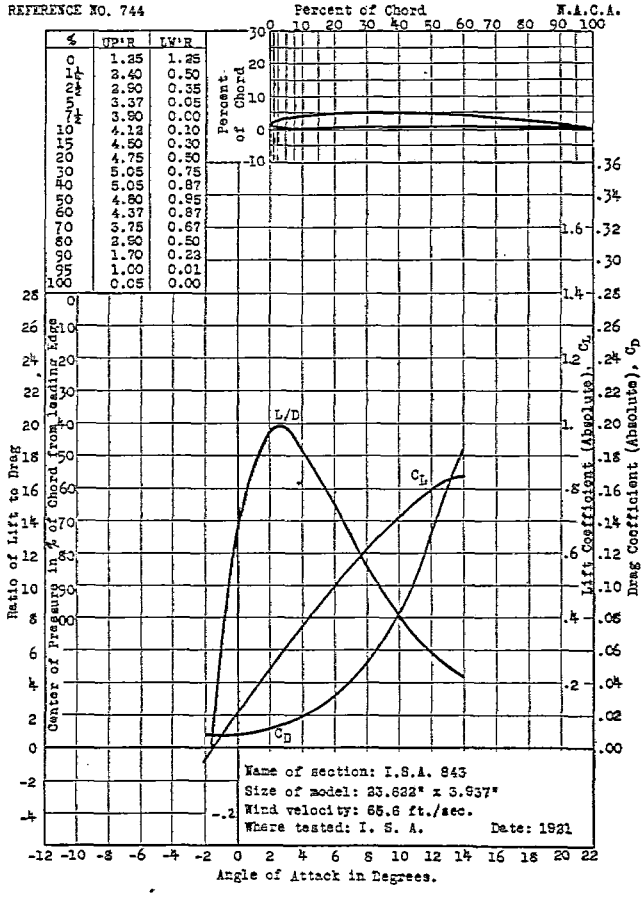
%	UP'R	LW'R
0	0.82	0.82
1¼	2.15	0.30
2½	3.60	0.17
5	3.85	0.03
7½	4.75	0.35
10	5.45	0.67
15	6.45	1.55
20	7.32	2.12
30	7.75	3.80
40	7.53	3.87
50	6.80	2.10
60	5.80	1.47
70	4.45	0.90
80	3.10	0.53
90	1.67	0.25
95	1.10	0.15
100	0.25	0.00

REFERENCE NO. 743



%	UP'R	LW'R
0	0.72	0.73
1¼	2.20	0.30
2½	2.80	0.10
5	3.82	0.00
7½	4.90	0.30
10	5.44	0.37
15	6.20	1.05
20	6.60	1.40
30	6.80	1.60
40	6.55	1.77
50	6.02	1.44
60	5.22	0.97
70	4.25	0.62
80	3.02	0.38
90	1.72	0.15
95	1.20	0.05
100	0.37	0.00

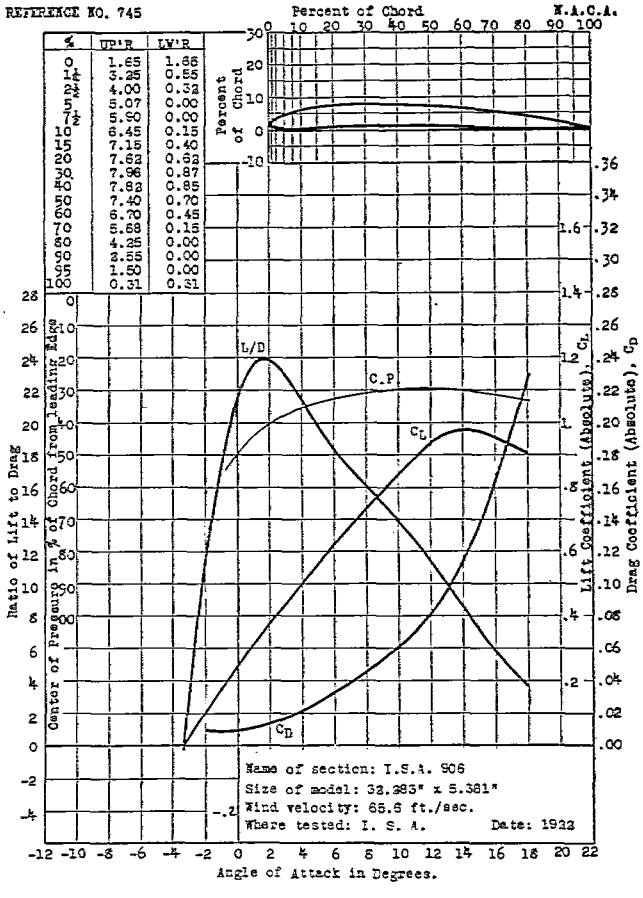
REFERENCE NO. 744



%	UP'R	LW'R
0	1.25	1.25
1¼	2.40	0.50
2½	2.90	0.35
5	3.37	0.05
7½	3.90	0.00
10	4.12	0.10
15	4.50	0.30
20	4.75	0.50
30	5.05	0.75
40	5.05	0.87
50	4.80	0.95
60	4.37	0.87
70	3.75	0.67
80	2.90	0.50
90	1.70	0.23
95	1.00	0.01
100	0.05	0.00

Name of section: I.S.A. 843
Size of model: 23.622" x 3.937"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1931

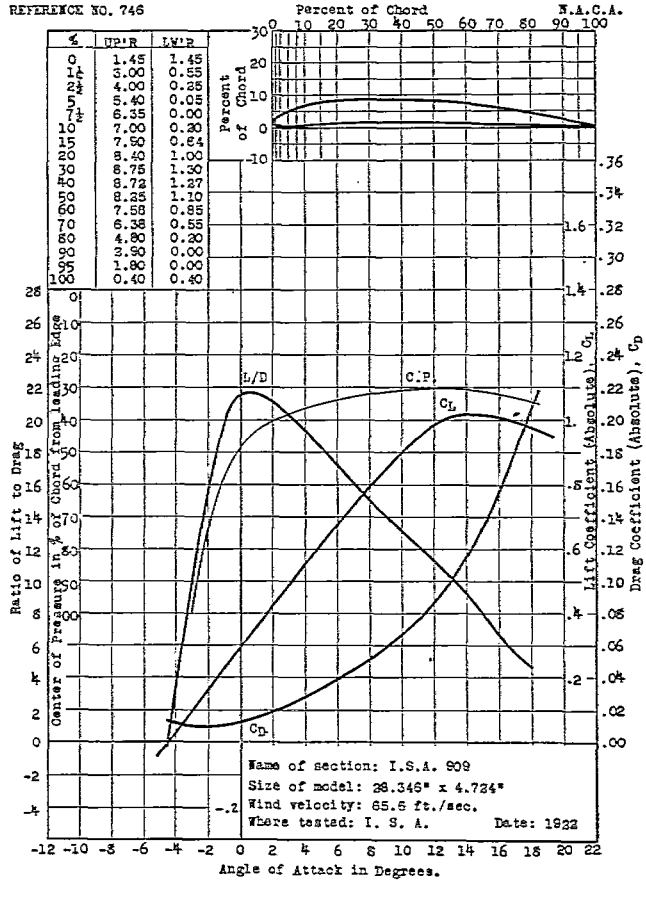
REFERENCE NO. 745



%	UP'R	LW'R
0	1.65	1.66
1¼	3.25	0.55
2½	4.00	0.32
5	5.07	0.00
7½	5.50	0.00
10	6.45	0.15
15	7.15	0.40
20	7.62	0.62
30	7.96	0.87
40	7.82	0.85
50	7.40	0.70
60	6.70	0.45
70	5.68	0.15
80	4.25	0.00
90	2.55	0.00
95	1.50	0.00
100	0.31	0.31

Name of section: I.S.A. 906
Size of model: 32.283" x 5.381"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1933

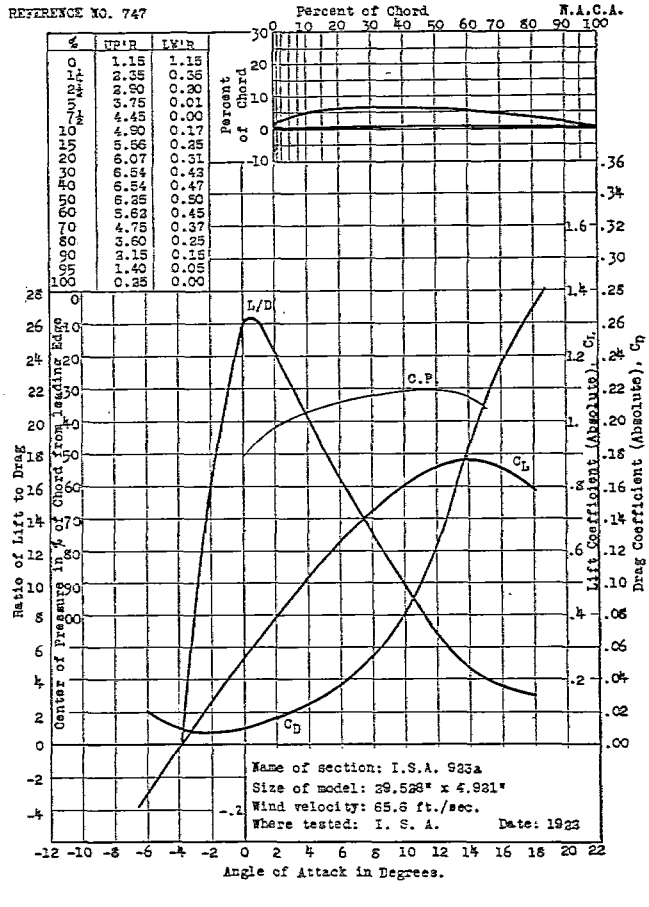
REFERENCE NO. 746



%	UP'R	LW'R
0	1.45	1.45
1¼	3.00	0.55
2½	4.00	0.25
5	5.40	0.05
7½	6.35	0.00
10	7.00	0.30
15	7.90	0.64
20	8.40	1.00
30	8.75	1.36
40	8.72	1.27
50	8.25	1.10
60	7.58	0.85
70	6.38	0.55
80	4.80	0.20
90	3.90	0.00
95	1.80	0.00
100	0.40	0.40

Name of section: I.S.A. 909
Size of model: 28.346" x 4.724"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1932

REFERENCE NO. 747

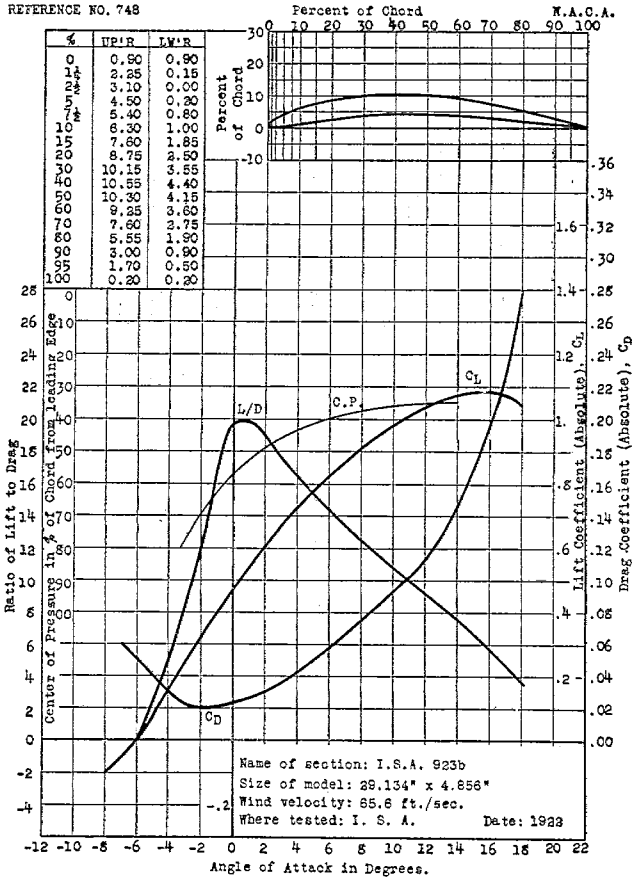


%	UP'R	LW'R
0	1.15	1.15
1¼	2.35	0.36
2½	2.90	0.20
5	3.75	0.01
7½	4.45	0.00
10	4.90	0.17
15	5.56	0.25
20	6.07	0.31
30	6.54	0.43
40	6.54	0.47
50	6.35	0.50
60	5.62	0.45
70	4.75	0.37
80	3.60	0.25
90	2.15	0.15
95	1.40	0.05
100	0.35	0.00

Name of section: I.S.A. 933a
Size of model: 39.528" x 4.931"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1933

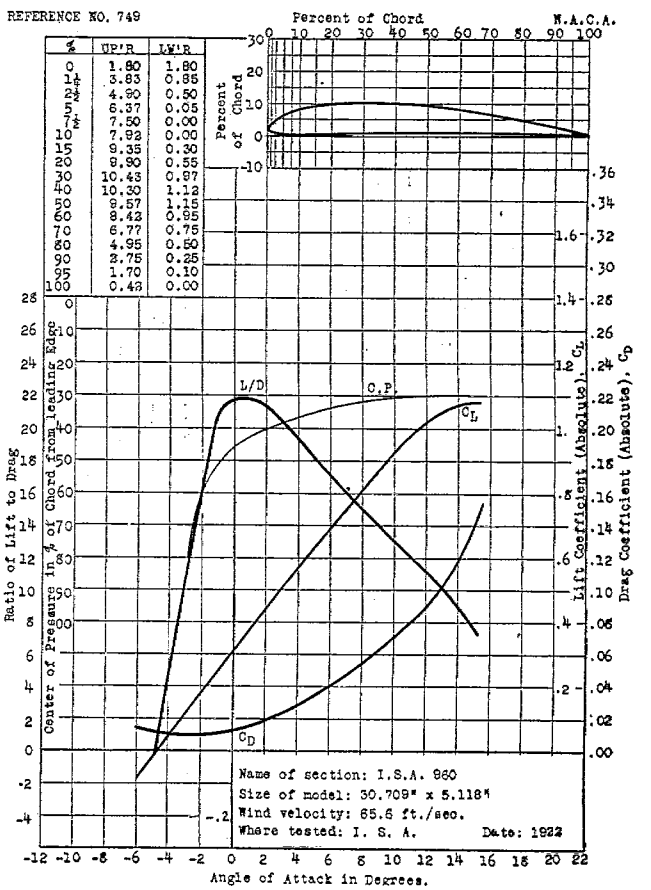
REFERENCE NO. 748

%	UP'R	LW'R
0	0.90	0.90
1¼	2.25	0.15
2½	3.10	0.00
5	4.50	0.20
7½	5.40	0.80
10	6.30	1.00
15	7.60	1.85
20	8.75	2.50
30	10.15	3.55
40	10.55	4.40
50	10.30	4.15
60	9.25	3.60
70	7.60	2.75
80	5.55	1.90
90	3.00	0.90
95	1.70	0.50
100	0.20	0.20



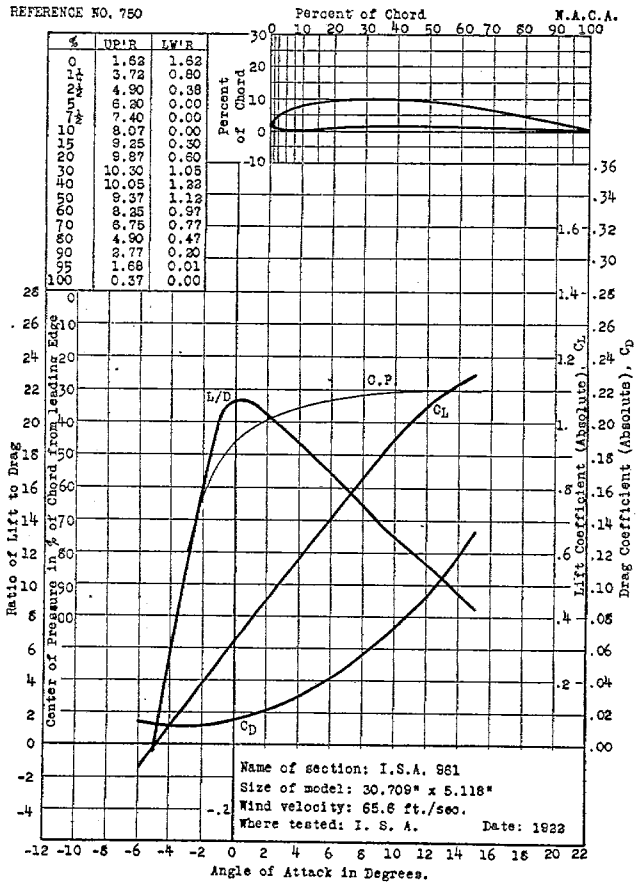
REFERENCE NO. 749

%	UP'R	LW'R
0	1.80	1.80
1¼	3.83	0.95
2½	4.90	0.50
5	6.37	0.05
7½	7.50	0.00
10	7.93	0.00
15	9.35	0.30
20	9.90	0.55
30	10.43	0.97
40	10.30	1.13
50	9.57	1.15
60	8.43	0.95
70	6.77	0.75
80	4.95	0.50
90	2.75	0.25
95	1.70	0.10
100	0.43	0.00



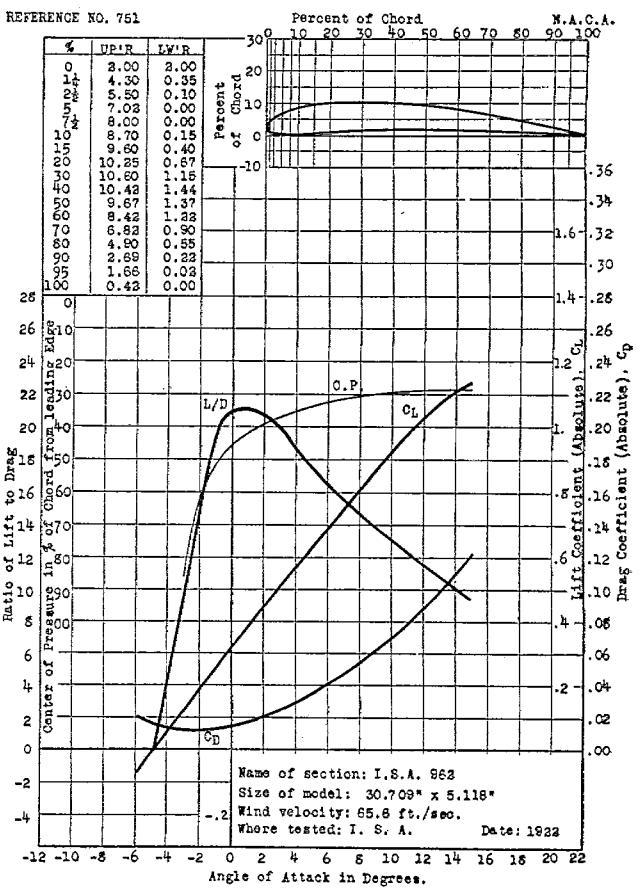
REFERENCE NO. 750

%	UP'R	LW'R
0	1.62	1.62
1¼	3.72	0.80
2½	4.90	0.38
5	6.30	0.00
7½	7.40	0.00
10	8.07	0.00
15	9.25	0.30
20	9.87	0.60
30	10.30	1.05
40	10.05	1.23
50	8.37	1.13
60	8.25	0.97
70	6.75	0.77
80	4.90	0.47
90	2.77	0.20
95	1.68	0.01
100	0.37	0.00

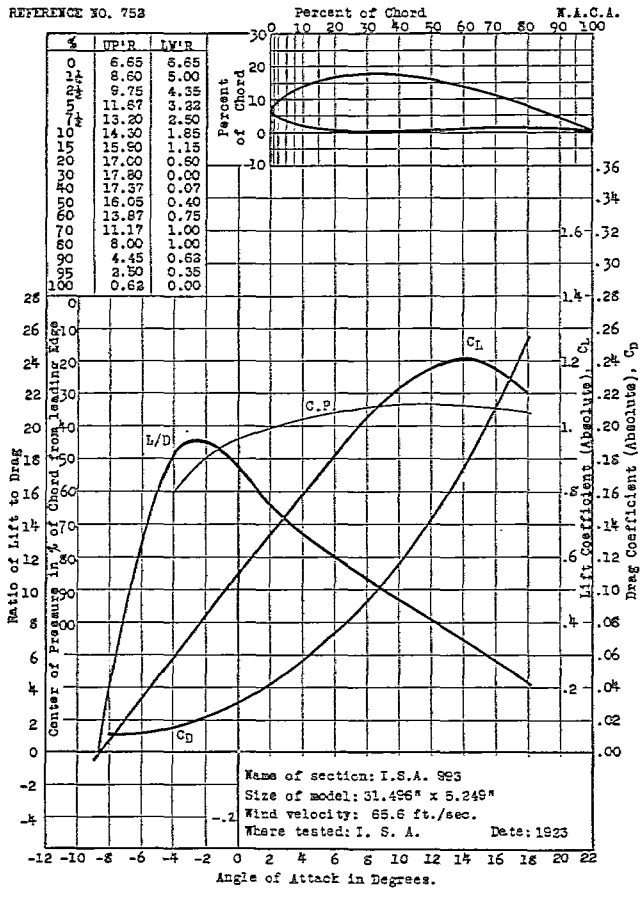


REFERENCE NO. 751

%	UP'R	LW'R
0	3.00	3.00
1¼	4.30	0.35
2½	5.50	0.10
5	7.03	0.00
7½	8.00	0.00
10	8.70	0.15
15	9.60	0.40
20	10.25	0.67
30	10.60	1.15
40	10.42	1.44
50	9.67	1.37
60	8.42	1.23
70	6.82	0.90
80	4.90	0.55
90	2.69	0.22
95	1.66	0.03
100	0.43	0.00



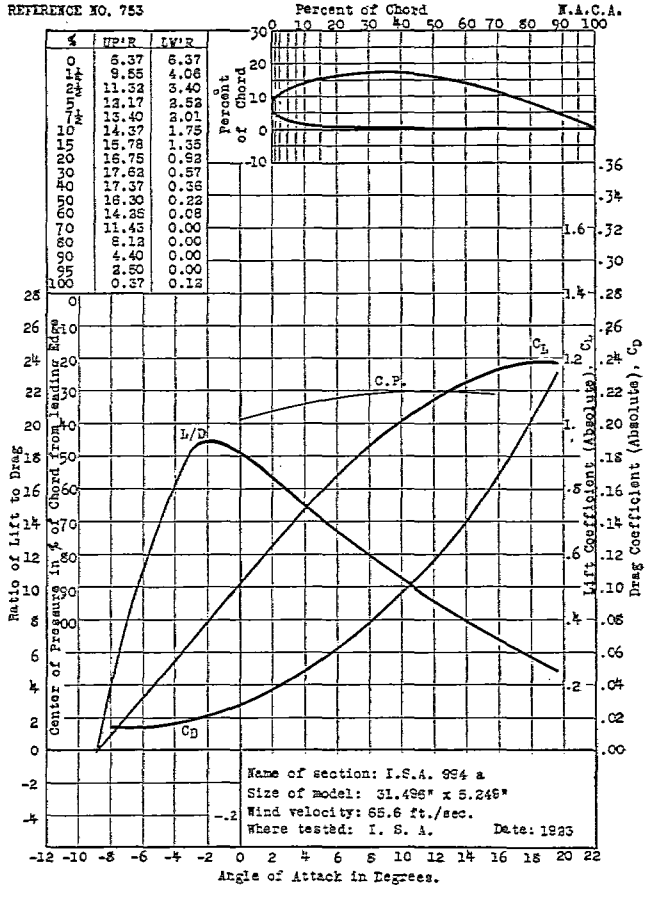
REFERENCE NO. 752



%	UPPER	LOWER
0	6.65	6.65
1¼	8.60	5.00
2½	9.75	4.35
5	11.67	3.22
7½	13.20	2.50
10	14.30	1.85
15	15.90	1.15
20	17.00	0.60
30	17.80	0.00
40	17.37	0.07
50	16.05	0.40
60	13.87	0.75
70	11.17	1.00
80	8.00	1.00
90	4.45	0.63
95	2.50	0.35
100	0.62	0.00

Name of section: I.S.A. 993
Size of model: 31.496" x 5.249"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1923

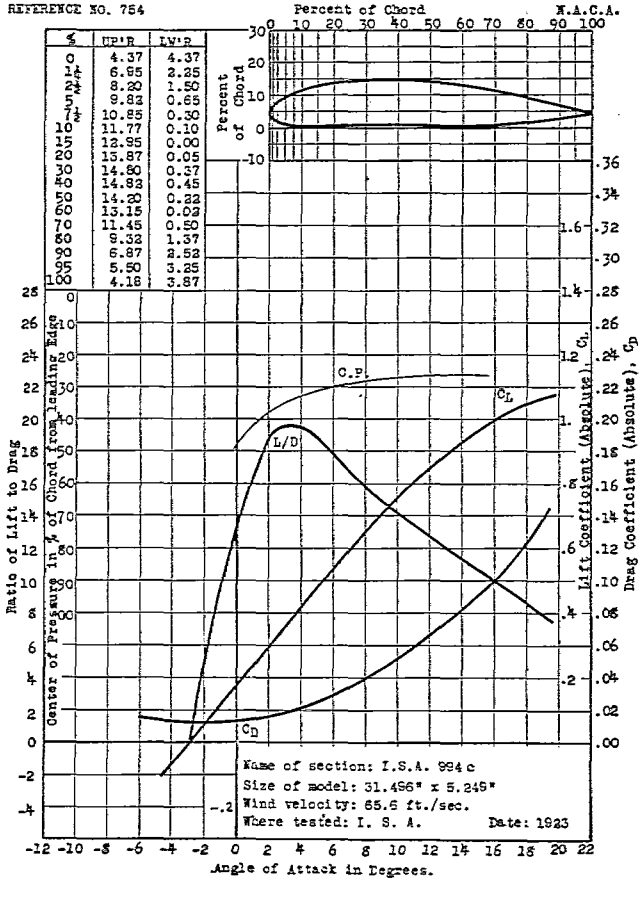
REFERENCE NO. 753



%	UPPER	LOWER
0	6.37	6.37
1¼	9.55	4.06
2½	11.32	3.40
5	13.17	2.52
7½	13.40	2.01
10	14.37	1.75
15	15.78	1.35
20	16.75	0.92
30	17.62	0.57
40	17.37	0.36
50	16.30	0.22
60	14.26	0.08
70	11.45	0.00
80	8.12	0.00
90	4.40	0.00
95	2.50	0.00
100	0.37	0.12

Name of section: I.S.A. 994 a
Size of model: 31.496" x 5.248"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1923

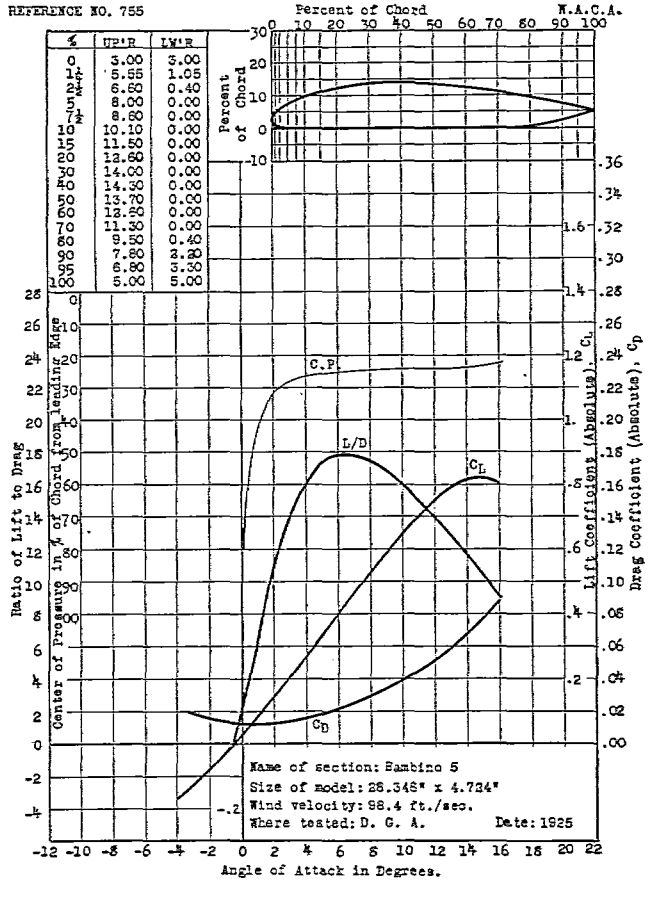
REFERENCE NO. 754



%	UPPER	LOWER
0	4.37	4.37
1¼	6.95	2.25
2½	8.20	1.50
5	9.82	0.65
7½	10.85	0.30
10	11.77	0.10
15	12.95	0.00
20	13.87	0.05
30	14.80	0.37
40	14.82	0.45
50	14.20	0.22
60	13.15	0.02
70	11.45	0.50
80	9.32	1.37
90	6.87	2.52
95	5.50	3.25
100	4.18	3.87

Name of section: I.S.A. 994 c
Size of model: 31.496" x 5.245"
Wind velocity: 65.6 ft./sec.
Where tested: I. S. A. Date: 1923

REFERENCE NO. 755

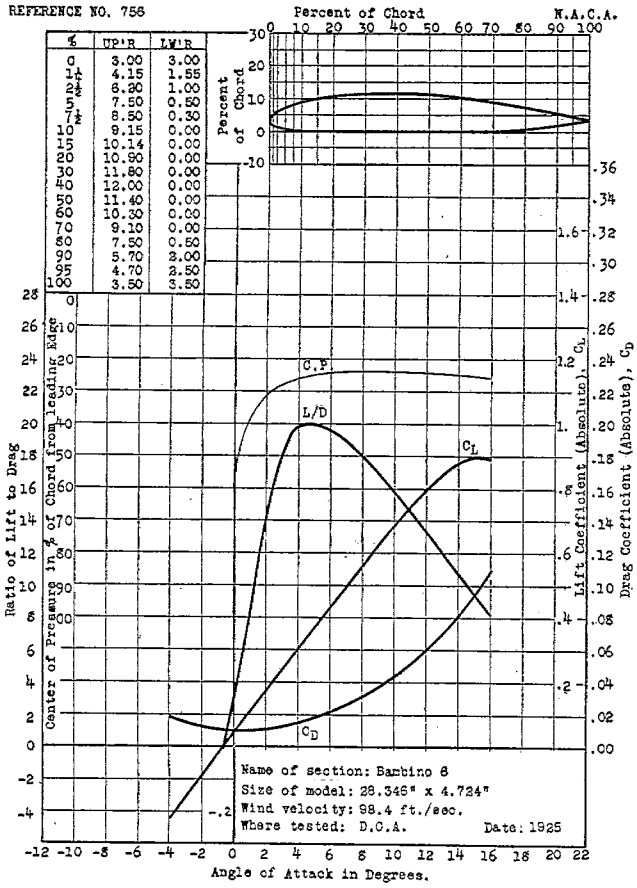


%	UPPER	LOWER
0	3.00	3.00
1¼	5.55	1.05
2½	6.68	0.40
5	8.00	0.00
7½	8.80	0.00
10	10.10	0.00
15	11.58	0.00
20	12.60	0.00
30	14.00	0.00
40	14.38	0.00
50	13.70	0.00
60	12.20	0.00
70	11.30	0.00
80	9.50	0.40
90	7.80	2.80
95	6.80	3.30
100	5.00	5.00

Name of section: Bambino 5
Size of model: 28.346" x 4.734"
Wind velocity: 98.4 ft./sec.
Where tested: D. G. A. Date: 1925

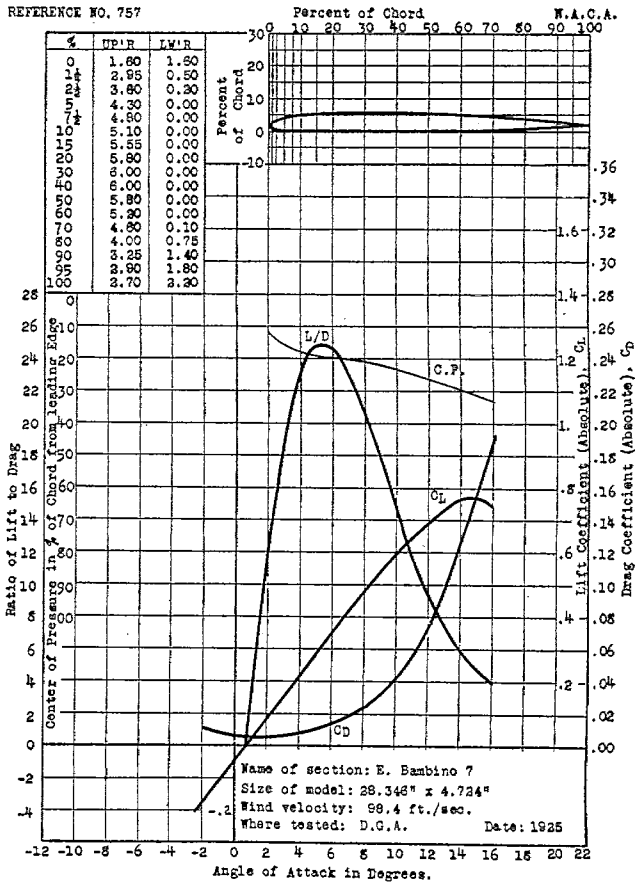
REFERENCE NO. 756

%	UPPER	LOWER
0	3.00	3.00
1¼	4.15	1.55
2½	6.20	1.00
5	7.50	0.50
7½	8.50	0.30
10	9.15	0.00
15	10.14	0.00
20	10.90	0.00
30	11.80	0.00
40	12.00	0.00
50	11.40	0.00
60	10.30	0.00
70	9.10	0.00
80	7.50	0.50
90	5.70	2.00
95	4.70	3.50
100	3.50	3.50



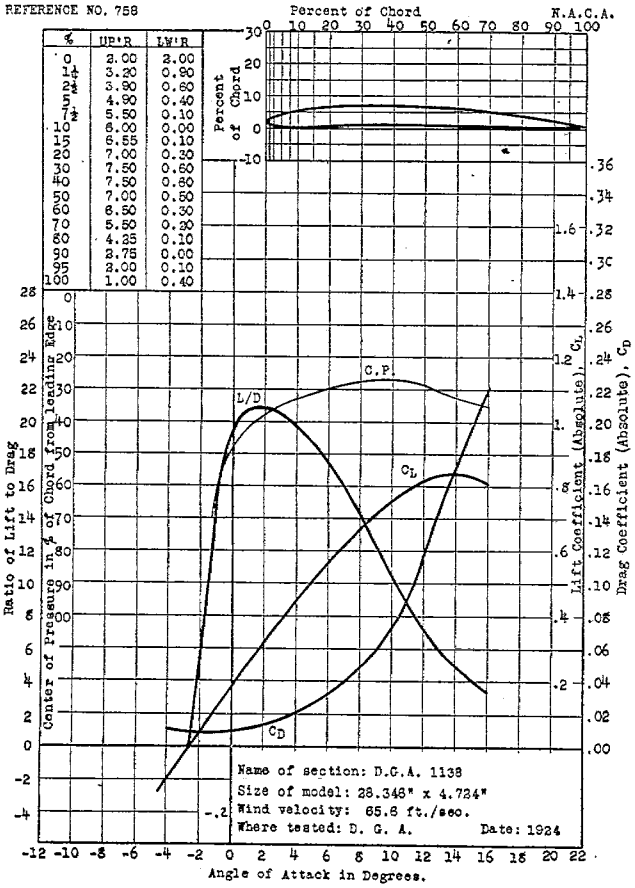
REFERENCE NO. 757

%	UPPER	LOWER
0	1.60	1.60
1¼	2.95	0.50
2½	3.80	0.20
5	4.30	0.00
7½	4.80	0.00
10	5.10	0.00
15	5.55	0.00
20	5.80	0.00
30	6.00	0.00
40	6.00	0.00
50	5.80	0.00
60	5.20	0.00
70	4.80	0.10
80	4.00	0.75
90	3.25	1.40
95	2.90	1.80
100	2.70	2.30



REFERENCE NO. 758

%	UPPER	LOWER
0	2.00	2.00
1¼	3.20	0.90
2½	3.90	0.60
5	4.90	0.40
7½	5.80	0.10
10	6.00	0.00
15	6.55	0.10
20	7.00	0.30
30	7.50	0.60
40	7.80	0.80
50	7.00	0.80
60	6.50	0.50
70	5.80	0.30
80	4.85	0.10
90	2.75	0.00
95	2.00	0.10
100	1.00	0.40



REFERENCE NO. 759

%	UPPER	LOWER
0	0.00	0.00
1¼	1.40	-0.55
2½	1.90	-0.80
5	2.50	-1.30
7½	2.80	-1.50
10	3.10	-1.70
15	3.65	-1.85
20	4.00	-2.10
30	4.30	-2.30
40	4.30	-2.40
50	4.00	-2.30
60	3.50	-2.00
70	2.90	-1.75
80	2.10	-1.25
90	1.25	-0.50
95	0.75	-0.30
100	0.30	0.00

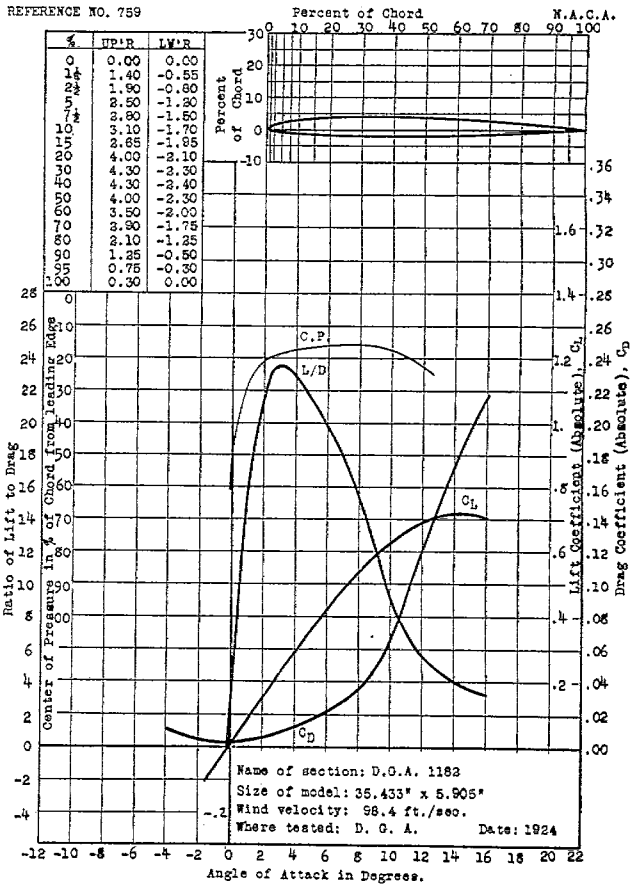


TABLE OF ORDINATES NOT GIVEN ON INDIVIDUAL CHARACTERISTIC SHEETS

Ordinates for dotted section, at tip, where ratio of ordinate to chord differs from that of section at center of span

Stations in per cent of chord	Reference 624 N. A. C. A. 81J (tapered)	
	Upper	Lower
0	3.06	3.06
1.25	3.94	2.00
2.50	4.28	1.66
5.00	4.74	1.24
7.50	5.06	0.91
10	5.31	0.68
15	5.61	0.35
20	5.79	0.17
30	5.76	0.02
40	5.41	0.01
50	4.81	0.11
60	4.05	0.23
70	3.15	0.34
80	2.17	0.37
90	1.11	0.25
95	0.58	0.13
100	0.00	0.00

Additional ordinates required to give camber at stations, not given on individual characteristic sheets

Stations in per cent of chord	Reference 626 B-2 (Modified M-80)		Reference 627 C-2 (Modified M-80)	
	Upper	Lower	Upper	Lower
8.95		0.00		0.00
12.70	7.36		7.38	
22.50	8.28		8.58	0.78
25.00	8.96	0.78	8.92	0.98
35.00	8.70	1.06	8.82	1.12
45.00	8.40		8.20	
74.50		0.02		0.00
98.00			1.30	0.40
99.00			1.10	0.60

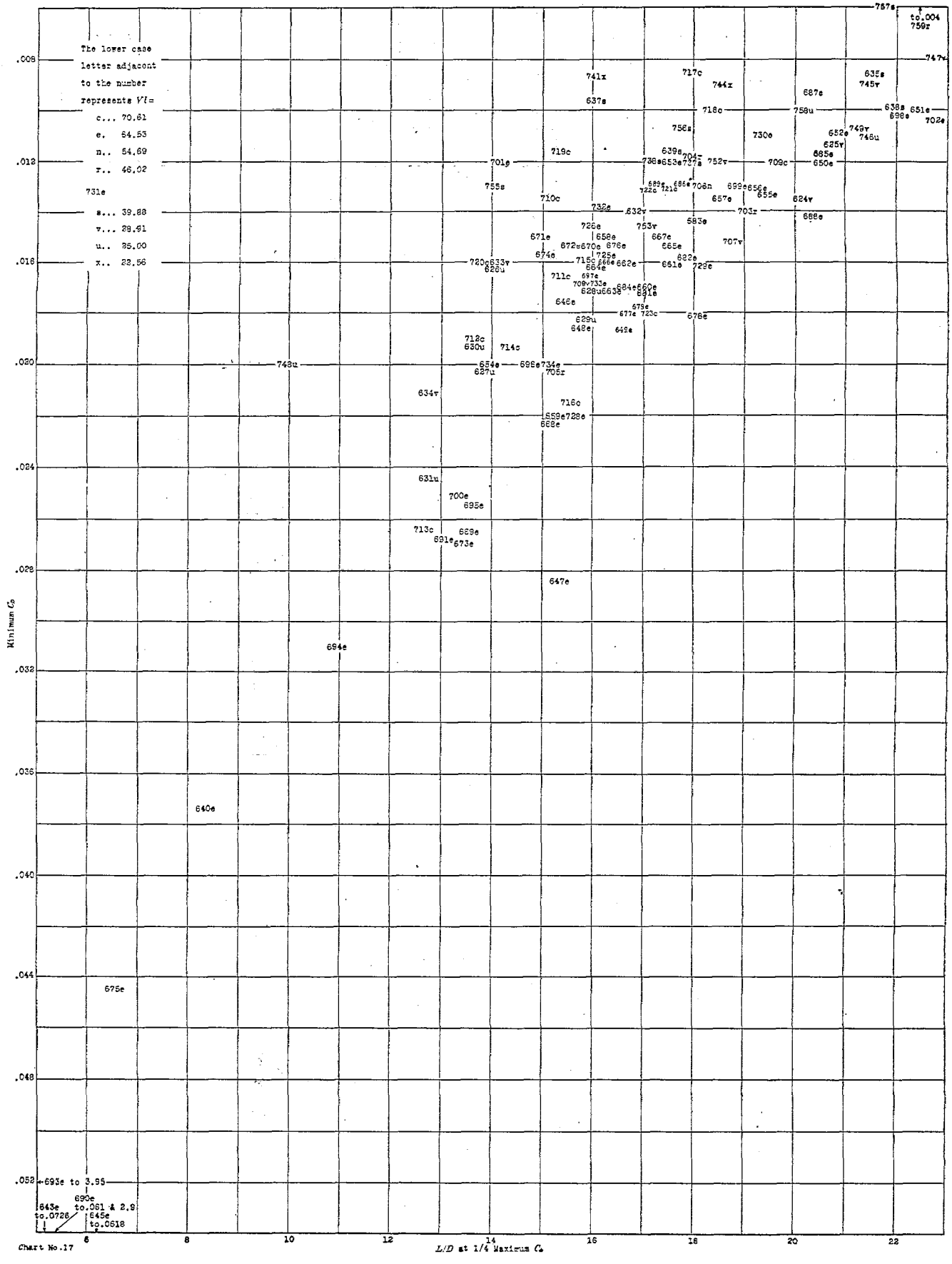
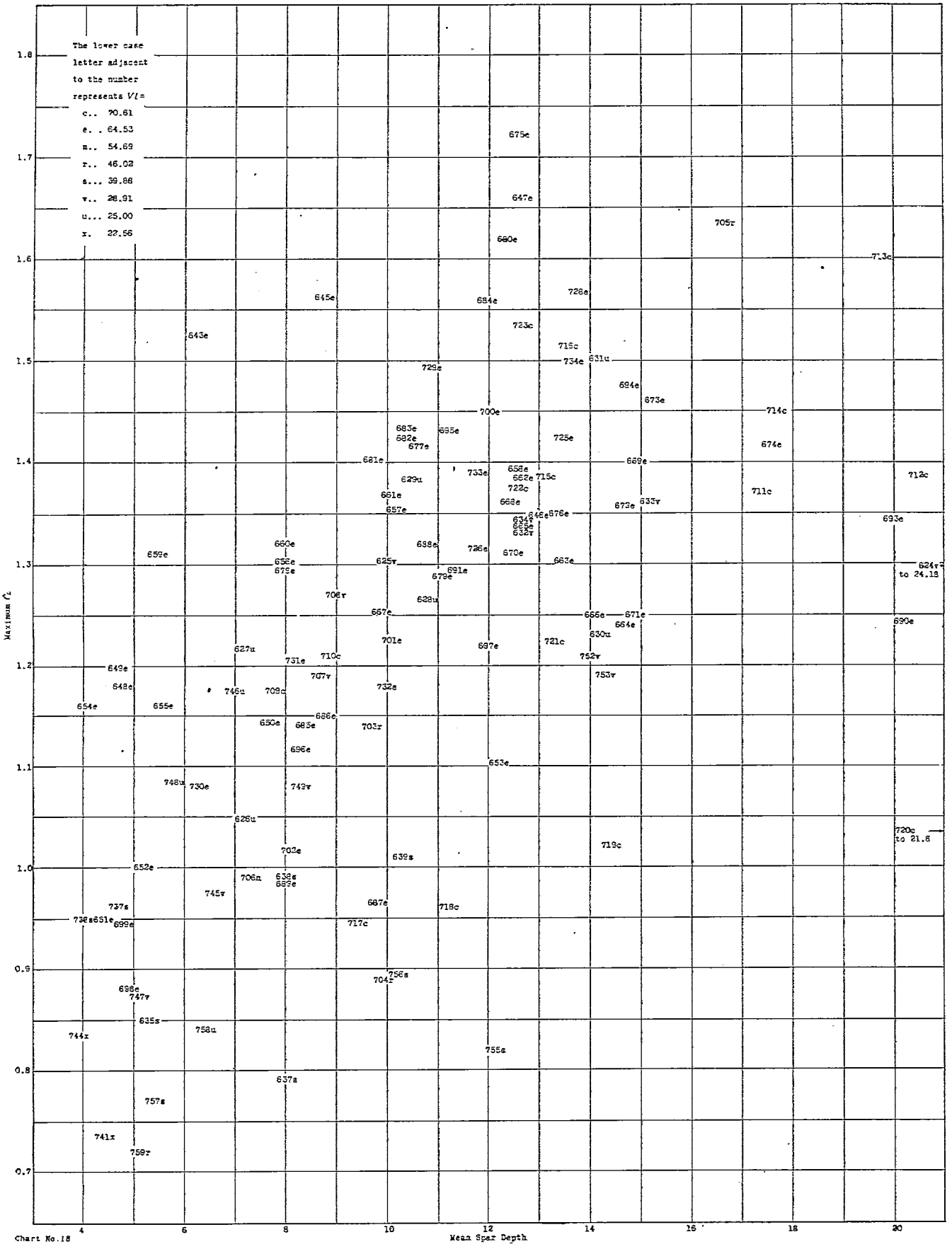
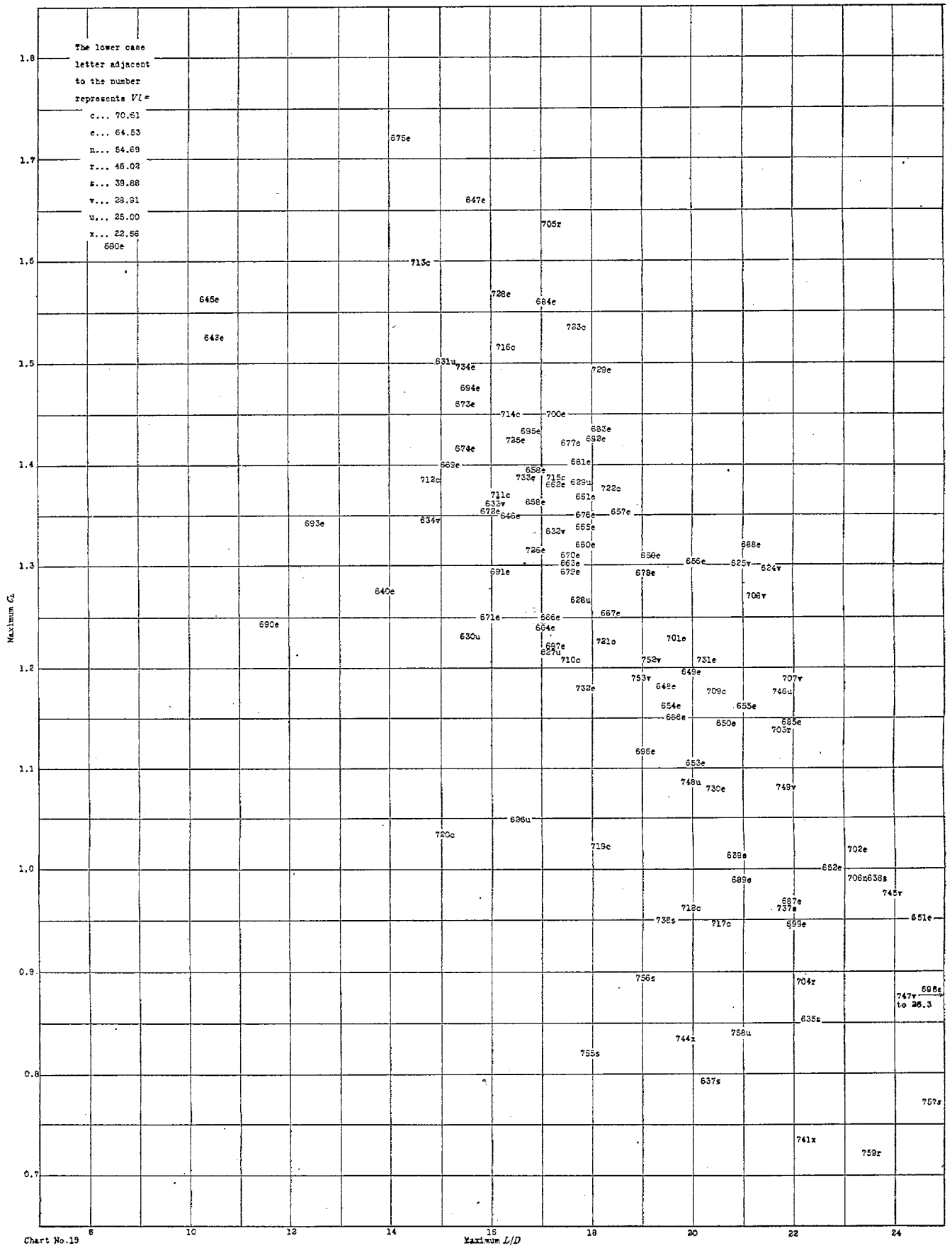

The lower case letter adjacent to the number represents VI=
c... 70.61
e. 64.53
n.. 54.69
r.. 46.02
s... 39.88
v... 29.91
u.. 25.00
x.. 22.56
Minimum C_D
L/D at 1/4 Maximum C_L
.008
.012
.016
.020
.024
.028
.032
.036
.040
.044
.048
.052
6
8
10
12
14
16
18
20
22
693e to 3.95
690e to.061 & 2.9
643e to.0726
645e to.0518

Chart No.17


The lower case letter adjacent to the number represents Vl=
c.. 70.61
e. . 64.53
m.. 54.69
r.. 46.02
s... 39.86
v.. 28.91
u... 25.00
x. 22.56
Maximum C_L
Mean Spar Depth
Chart No.18


The lower case letter adjacent to the number represents Vl =
c... 70.61
e... 64.53
n... 54.69
r... 46.02
s... 39.88
v... 28.91
u... 25.00
x... 22.56
Maximum C_L
Maximum L/D
Chart No.19

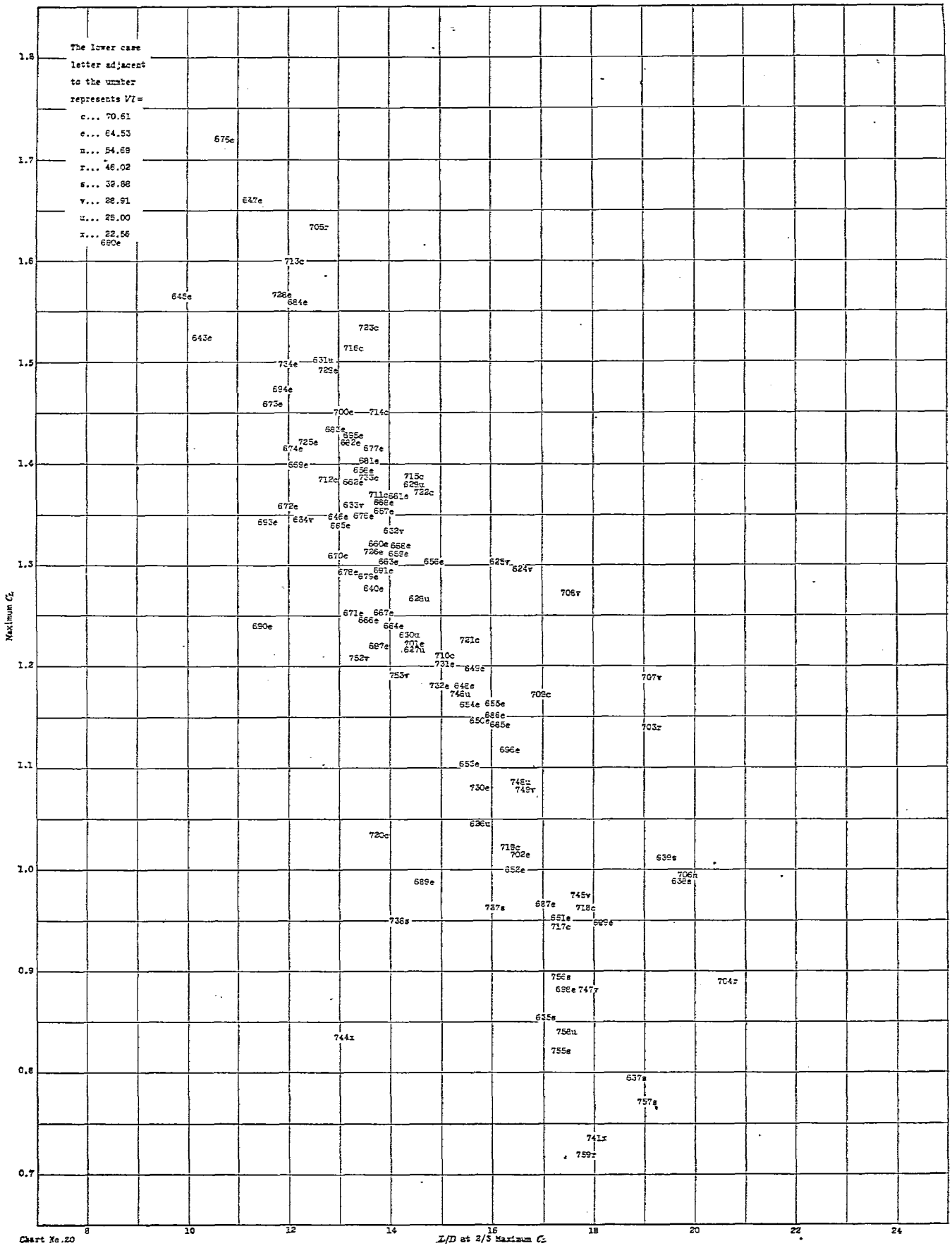

The lower case letter adjacent to the number represents VI =
c... 70.61
e... 64.53
n... 54.69
r... 46.02
s... 38.88
v... 28.91
u... 25.00
x... 22.56
Maximum C_L
L/D at 2/3 Maximum C_L
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
8
10
12
14
16
18
20
22
24
675e
647e
705r
690e
713c
645e
728e
684e
723c
643e
716c
734e
631u
729e
694e
673e
700e
714c
683e
655e
725e
682e
677e
674e
669e
681e
656e
712c
662e
715c
629u
732c
711c
661e
672e
633v
668e
667e
693e
634v
646e
676e
665e
632v
660e
658e
726e
652e
670c
663e
656e
625v
624v
678e
675e
691e
640e
626u
708v
671e
667e
650e
666e
664e
630u
721c
687e
701e
627u
752v
710c
731e
649e
753v
707v
732e
642e
746u
709c
654e
655e
686e
650e
685e
703r
696e
653e
730e
748u
749v
636u
720c
718c
702e
639s
652e
706n
638s
689e
745v
737s
687e
718c
738s
651e
717c
699e
756s
704r
698e
747r
635s
744x
758u
755s
637s
757s
741x
759r

Chart No. 20